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Original Articles.

A REPORT OF THE PRESENT STATUS OF THE ELECTROLYTIC METHOD

IN THE TREATMENT OF URETHRAL STRICTURES—WITH STATISTICS OF ONE HUNDRED CASES TREATED BY DR. FRED. S. CROSSFIELD, OF HARTFORD, CONN.

By ROBERT NEWMAN, M. D.

(Member N. Y. Pathological Society; Consulting Surgeon to Hackensack and Bayonne Hospitals; Consulting Physician to Home for Aged and Infirm, Yonkers; Honorary member Ulster County Medical Society; Honorary member Danbury Medical Society, etc. etc.)

At the last annual meeting of the American Electro-Therapeutic Association held in New York, October, 1892, the writer presented a statistic of another series of one hundred cases of urethral strictures treated by electrolysis, which with the two series previously reported, and published, make 300 cases in all.

There are no new developments to offer, but the results of the cases now presented confirm former statements, that Electrolysis, scientifically applied, is absolutely successful in the treatment of strictures of the urethra.

Doctor F. S. Crossfield, 47 Pratt street, Hartford, Conn., had the kindness to send me a statistical report of one hundred cases of urethral strictures, treated by him, by electrolysis. The successful result of these cases is so strikingly

similar to my own experience, that I take pleasure to annex these statistic tables. I have no personal acquaintance with Dr. Crossfield, we never have seen each other, which circumstance is a proof that our similar statistics are the consequence of personal experience, based on work in the same direction, and on the same scientific principles of natural laws.

Electrolysis rests on fundamental laws of physics and chemistry, so well established that if applied accordingly, failures in the treatment are impossible. In that sense, it is re-asserted that electrolysis *per se*, cannot fail, while it is admitted that ultimate success in a certain case may be prevented in different ways, namely: unforeseen complications; imperfect instruments; negligence of the operator; wrong diagnosis, and the actions of the patient. Failures consequent upon the unskillful manipulation on the part of those who are unqualified, are only the natural effects of causes, and as there exist so many such causes, it is a wonder that more failures have not been recorded. The writer has practised this method of electrolysis successfully for over twenty-three years, and has already described the *modus operandi* and instruments, and laid down rules minutely for the operation. It is unnecessary, therefore, to recapitulate them; the leading features for the operation being that the constant current of galvanism only must be used,

always applying the negative pole to the seat of the stricture, using only weak currents of from three to five milliamperes, seances lasting not more than from five to ten minutes, with intervals of about one week or longer. Only one instrument should be used at each seance, and the operation ought never to be attempted while the mucous membrane is in a state of inflammation. The patient's strength should not be overtaxed, and gentleness prevail throughout the whole operation. As a matter of course, only the best instruments should be selected and used.

The advantages of electrolysis over other operations is confirmed by the new cases now presented, namely:—

1st. That it is applicable to all strictures in any part of the urethra.

2nd. That it will pass and enlarge any strictures when other instruments or the skill of the surgeon fail.

3rd. That it causes no pain or inconvenience.

4th. It is devoid of danger.

5th. It is not followed by hemorrhage, fever, or any other unpleasant consequence.

6th. It relieves at once.

7th. The patient is not prevented from attending to his business while under treatment, and is without restraint; and,

8th. No relapse takes place.

The electrolytic method may not for some time become so popular that every general practitioner will use it, since it needs beyond skillfulness, great patience, gentle touch, good instruments, and electric apparatus in perfect order, also the qualifications of a master electrician, and genito-urinary expert.

Electricity, and electrolysis in particular, have had many skeptics and adversaries, but who now in this progressive age of science and civilization, have dwindled down to a few unreasoning ones, while the converts are legion; and the status has changed to a better appreciation of the method now acknowledged as a success, so that scarcely any honest opposition or doubt exists. It seems that the enemies of the system are reduced almost to a single individual, who has resorted to such doubtful and dishonest methods in decrying electrolysis, that it assumes the appearance of

personal malice, rather than a truthful and dignified scientific dissent. One of these ingenious methods is to throw doubt upon documentary evidence proving the success of electrolysis. In the year 1885, a physician made a written statement of a case, which was published. With apparent design, after the death of this physician, and a lapse of about four years from the date of the letter, a polite note is written to the physician by a critical adversary, asking him to give the date of the treatment, etc. This polite note, as was expected, was as politely returned to him by the postmaster, who evidently declined to assume the responsibility of forwarding it to its destination; and the investigator closed his report with the triumphant words, "the inference is obvious." At another time he reports (as his duty as an editor required) some cases treated successfully by electrolysis by an eminent physician in London, ending with the exclamation, "the burning question again!" Such insinuations and misrepresentations must show very clearly on their face, with any "obvious inferences," the unworthy motives of an unsuccessful operator, who, as an editor while reporting successful operations by electrolysis, closes such reports with a caption seemingly intended to be a skeptical and misleading criticism.

But while we have still to contend with this exceptional case of wilful or ignorant misrepresentation, it is a pleasure that the cases which are herewith submitted confirm those already reported, and establish the success of the treatment. This success, summarily, is proved by—

1st. Reports of thousands of successful cases by different trustworthy writers, to which the author has contributed and published three hundred.

2nd. Patients who have, during many years, been observed and re-examined, and can bear testimony of permanent results.

3rd. Acknowledgments by the medical press, journals and modern text-books; and

4th. Documentary evidence, which has never been concealed from those desiring an honest examination, and is always open to inspection, and can be substantiated by reference to most of the patients

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themselves, or to their family physician or friends.

It is a pleasure to re-affirm all previous statements heretofore made, despite adverse criticism, and to welcome an investigation of stubborn facts which do not yield to "obvious inferences," but whose convincing truth is established by honest, careful and judicious investigation.

The additional 100 cases annexed here came just opportunely and in sending the report to me, Dr. F. S. Crossfield writes as follows:

"I have practiced electrolysis for the treatment of stricture of the urethra

upwards of eight years with success. My synopsis of one hundred cases and observations coincides with the published statistics of Dr. Robert Newman, of New York. My cases were all seen in private practice. Those reported here were not selected cases, but taken in order of occurrence. Many cases reported improved, but not cured, could have been made so, had the patient carried out instructions, and continued treatment; others moved away, and were lost sight of. Taking the cases as a whole, together with those of Dr. Newman, it establishes the practical value of the method."

No.	Patient's Initials. Date of First Visit.	AGE.	Cause, Duration, Complications.	No. Strictures Found.	Distances from Neatus. Inches.	Size Stricture. Fr. Scale.	TREATMENT.			Sequel, Calibre Urethra when Disch'd. Fr. Scale.	Last Heard From.	Time of Observ'n after Discharge.	
							How Many Stances.	Average Intervals. Days.	Time of			YRS.	MOS.
1	C. H. S., Apl. '86	58	Gonorrhoea 30 yrs	2	5, 7,	16	8	14	6 m'o's	30	September, '92	6½	
2	F. W., Apl. '86	23	" 3 "	1	4,	8	4	7	6 w'k's	18	April, '89	3	
3	H. P., Jr., Oct. '86	24	" 5 "	1	3,	6	5	10	8 "	20	November, '88	2	
4	J. E. S., Jan. '86	17	" 2 "	1	3,	9	4	10	1½ m'o's	21	January, '87	1	
5	S. A. C., Jan. '86	26	" 7 mo	2	2, 5,	12	6	14	3 "	20	December, '86		11
6	C. F. S., Jan. '86	18	" 1 yrs	1	5,	NIL	6	14	2½ "	18	April, '87		15
7	R. E. D., Jan. '86	84	" 2½ "	1	4,	6	8	14	2½ "	29	January, '87		12
8	J. N. W., Jan. '86	27	" cystitis 3 "	3	1, 3, 4½	7	8	10	2 "	20	Improved.		
9	O. R. S., Jan. '86	29	" 1 "	2	4,	11	4	10	2 "	30	January, '86	3	
10	J. L., Jan. '86	31	" 4 "	1	5,	12	5	14	2½ "	18	July, '87	1½	
11	A. O. P., Feb. '86	19	" 2 "	1	4,	0	4	14	2 "	27	April, '87		14
12	A. D. R., Feb. '86	42	" 13 mo	1	2,	6	6	14	3 "	24	January, '90	4	
13	H. E. B., Feb. '86	38	" 1 yrs	2	1, 5,	9	7	14	4 "	18	September, '87		19
14	D. E. S., Feb. '86	18	" orchitis	1	3,	12	5	10	2½ "	26	December, '90	4½	
15	A. E. P., Feb. '86	27	" 5 "	3	2, 3½, 5	8	10	10	4 "	18	Died, Bright's		
16	A. D. S., Feb. '86	64	Excesses	5	"	11	7	14	3½ "	21	August, '86	Lost sight of	
17	F. M. W., Mar. '86	27	Gonorrhoea 12 "	1	4,	11	5	14	3 "	29	January, '87		10
18	C. D. F., Mar. '86	19	" 2 "	1	2,	0	8	14	4 "	24	August, '86	Left town.	
19	W. H. R., Mar. '86	20	" cystitis 3 "	2	3, 4,	12	8	10	3 "	18	August, '89	3	4
20	R. W. F., Mar. '86	84	" 1 "	1	5,	8	6	10	2½ "	31	May, '89	8	2
21	Jos. K., Mar. '86	48	" 7 "	1	3,	6	4	10	2 "	30	January, '90	3	10
22	F. P., Mar. '86	56	Unknown	3	" 2, 4, 6,	11	5	14	3 "	17	July, '92	Improved.	
23	E. P. R., Mar. '86	23	Gonorrhoea 1 "	2	3, 5,	14	6	14	3 "	20	April, '91	Improved.	
24	Nat'l B., Mar. '86	29	" 3 "	1	6,	12	3	14	2½ "	26	July, '92	6	4
25	P. H., Mar. '86	35	" 2 "	1	4,	18	4	14	2½ "	23	August, '91	5	5
26	C. P. W., Apl. '86	28	" 2 "	1	5,	0	7	14	4 "	18	January, '90	3	9
27	W. E. S., Apl. '86	60	" 1 "	1	3,	6	4	10	2 "	20	April, '88	2	
28	C. A. S., May. '86	50	" 18 mo	2	3, 4,	20	6	12	3 "	15	September, '86	Lost sight of	
29	C. W. M., May. '86	42	" 1 yrs	1	2,	18	5	10	2½ "	30	September, '89	3	4
30	G. W. W., May. '86	23	" 5 "	1	6,	11	5	14	2½ "	26	March, '91	4	10
31	C. S., May. '86	27	" orchitis 2 "	1	4,	6	4	12	2 "	20	August, '92	6	8
32	C. C. T., June. '86	33	" 10 "	8	3, 4½, 6	12	7	14	3½ "	18	October, '86	Died, some acute dis'se	
33	H. S., June. '86	62	" 12 "	1	5,	17	4	14	2 "	21	May, '88	1	11
34	D. N. H., June. '86	59	" u'k'wn time	2	2, 3,	20	8	14	4 "	24	August, '89	3	2
35	R. C., July. '86	49	" 7 "	1	2,	21	7	14	3½ "	29	April, '91	4	9
36	H. A. D., July. '86	22	" 9 mo	1	5,	11	3	14	2½ "	23	September, '92	6	2
37	G. K., Aug. '86	33	" 2 yrs	1	3,	20	5	10	2 "	26	April, '90	3	8
38	H. H. H., Aug. '86	81	" 5 "	1	5,	6	6	12	3 "	18	December, '89	3	4
39	J. B., Aug. '86	59	" 10 "	1	4,	8	4	10	2 "	23	September, '89	3	
40	A. P. Y., Sept. '86	29	" 1 "	2	2, 7,	12	7	14	3½ "	21	July, '88	1	10
41	G. F. S., Sept. '86	30	" cystitis 3 "	1	6½,	11	7	14	3 "	17	October, '90	4	
42	F. E. R., Oct. '86	34	" 7 "	1	4,	14	4	14	2½ "	30	June, '90	3	8
43	R. O. E., Oct. '86	19	" 1 "	1	5,	11	5	14	3 "	26	April, '92	5½	
44	C. E. P., Oct. '86	58	" 15 "	2	2, 7,	12	7	10	3 "	21	July, '89	2	9
45	A. D. M., Nov. '86	27	" 9 mo	1	6,	20	4	10	2 "	29	July, '91	4	8
46	C. R. S., Nov. '86	64	" 30 yrs	3	2, 4, 5,	8	10	14	5 "	18	April, '90	3	5
47	G. A. R., Nov. '86	25	" 6 "	1	3,	0	5	14	3 "	27	October, '92	5	11
48	C. C. C., Oct. '86	47	" 12 "	3	3, 4, 6,	8	10	14	6 "	15	May, '88	Improved.	
49	G. W. W., Nov. '86	68	" 25 "	1	6,	12	7	10	2½ "	18	June, '88	1	7
50	N. B., Dec. '86	56	" prostatitis 15 "	2	4, 6,	8	4	14	2 "	24	December, '89	3	
51	W. E. P., Dec. '86	35	" 6 "	1	4,	12	6	10	2 "	30	January, '91	5	
52	H. E., Dec. '86	61	" 17 "	2	1½, 5,	11	10	14	5½ "	17	May, '88	1½	

No.	Patient's Initials. Date of First Visit.	AGE.	Cause, Duration, Complications.	No. Strictures Found.	Distance from Meatus. Inches.	Size Stricture. Fr. Scale.	TREATMENT.			Sequel, Calibre Urethra when Disch'ged. Fr. Scale.	Last Heard From.	Time of Observat'n after Discharge.	
							How Many Seances	Average Intervals, Days.	Time of			Yrs.	Mos.
53	J. S., Dec, '86	49	" 5 "	1	6,	9	5	14	2	"	15	Not h'rd from.	
54	D. L. A., Dec, '86	45	" 3 "	2	2, 5,	12	6	14	3	"	15	Died, Bright's	
55	A. H., Dec, '86	69	" excess's 20 "	1	1,	8	4	10	1 1/2	"	18	December, '88	2
56	C. C. B., Mar, '87	23	" 1 "	1	3,	13	4	12	1 1/2	"	18	March, '89	2
57	W. R. W., Mar, '87	61	" u'k'w'ntime 2 "	2	1 1/2, 4,	8	4	14	2	"	14	Not h'rd from.	
58	G. F. R., May, '87	28	" 3 "	2	2, 4,	11	8	14	4	"	21	November, '89	2 1/2
59	J. O. P., May, '87	67	Gleet excess's 30 "	3	1, 3, 5,	12	6	14	6	"	14	Improved.	Mov'd aw'y
60	H. M. W., May, '87	25	Gonorrhoea 1 yrs	2	1 1/2, 5,	12	6	14	3	"	20	September, '89	2
61	M. W. S., May, '87	26	" 2 "	2	1, 3, 5,	11	9	10	3	"	19	February, '90	2
62	L. A. C., June, '87	45	" 7 "	1	6,	6	5	14	2 1/2	"	18	January, '90	2
63	C. B. L., June, '87	26	" 14 mo	1	3,	12	4	14	2	"	20	January, '89	Died Consump- tion
64	E. S. Y., June, '87	34	" 2 yrs	1	4,	7	6	14	3	"	16	October, '89	2
65	M. H., June, '87	48	" 3 "	1	6,	9	6	14	3	"	18	July, '89	2
66	S. F. S., June, '87	29	" 13 mo	2	2, 5,	11	6	8	2	"	16	September, '90	3
67	C. C. G., June, '87	34	" 5 yrs	1	3,	12	8	14	4	"	18	September, '89	2
68	U. D. A., July, '87	27	" 2 "	1	4,	9	2	14	1	"	18	Left town.	
69	S. F. A., Aug, '87	25	" 9 mo	1	5,	11	6	10	2	"	15	August, '89	2
70	I. N. T., Sept, '87	29	" 2 yrs	1	6,	12	6	14	3	"	20	November, '88	1
71	C. S. R., Sept, '87	26	" 3 "	1	4,	12	6	10	2	"	18	September, '89	3
72	H. W. M., Sept, '87	19	" 18 mo	1	6,	12	4	14	2	"	20	October, '91	4
73	G. C. McL., Sept, '87	23	" 16 "	2	2, 5,	0	4	14	2	"	17	March, '90	2 1/2
74	A. W. R., Oct, '87	35	" 2 yrs	1	5,	9	3	14	1 1/2	"	15	January, '90	2
75	N. F. W., Nov, '87	46	fell on Peri-neum 3 "	1	7,	0	10	14	5	"	9	Improved.	Dissipated.
76	Wm. H., Jan, '88	34	Gonorrhoea 6 "	1	5,	9	5	10	2	"	15	Well, Feb, '89	1
77	Wm. O'B., Jan, '88	27	" 1 "	1	4,	9	6	10	2	"	14	February, '90	2
78	C. G., Feb, '88	28	" 2 1/2 "	1	4,	11	4	14	2	"	17	January, '91	2
79	E. M. D., Feb, '88	42	" syphilis 7 "	1	6,	8	10	14	5	"	17	September, '91	Died Pneu- monia.
80	E. M. F., Mch, '88	27	" 1 "	2	2, 6,	12	4	10	1 1/2	"	18	January, '92	3
81	E. A. E., May, '88	19	" 8 mo	1	1,	11	7	14	3	"	19	August, '90	2
82	G. A. F., June, '88	52	" 15 yrs	2	4, 7,	8	8	14	4	"	20	November, '90	2
83	C. E. H., Sept, '88	56	" cystitis 20 "	3	4, 5, 6,	8	10	14	4	"	18	November, '92	4
84	E. D. R., Oct, '88	26	" 1 "	1	4,	12	6	14	3	"	20	November, '91	3
85	L. L. E., Oct, '88	48	" 10 "	1	7,	12	5	20	3 1/2	"	20	January, '92	3
86	F. H. C., Nov, '88	28	" 14 mo	1	6,	11	4	30	4	"	23	August, '91	2
87	O. M. C., Nov, '88	39	" 1 yrs	1	3,	9	6	10	2	"	19	November, '90	2
88	J. A. B., Dec, '88	24	" 9 mo	1	5,	12	5	10	2	"	20	February, '91	2
89	L. L. L., Dec, '88	54	" 17 yrs	1	5,	9	4	14	2	"	14	April, '89	2
90	W. S. C., Dec, '88	24	" gleet 1 1/2 "	1	4,	9	3	14	1 1/2	"	17	Died, Cons'p'n.	
91	W. E. S., Jan, '89	35	Traumatism 7 "	1	5, 4, 6,	14	4	10	1 1/2	"	17	January, '90	1
92	W. S. N., Feb, '89	27	Gonorrhoea 1 "	3	1, 4, 6,	8	10	14	5	"	20	August, '90	1
93	J. H. D., Mch, '89	29	" 15 mo	1	5,	12	5	14	2	"	18	February, '91	2
94	W. J. B., Apl, '89	25	" 2 yrs	1	3,	12	6	14	3	"	24	March, '90	1
95	J. R., Aug, '89	48	" 7 "	1	5,	12	4	10	1 1/2	"	23	October, '92	2
96	J. O. B., Aug, '89	27	" cystitis 2 "	1	6,	9	8	14	4	"	20	August, '91	2
97	M. M., Sept, '89	28	" 2 "	3	2, 4, 7,	0	12	14	6	"	17	April, '90	Left town.
98	A. C. W., Dec, '89	32	" syphilis orchitis 5 "	2	3, 5,	11	6	10	2	"	18	October, '92	1
99	A. H. McD., Jan, '90	29	" 3 "	2	4, 5 1/2,	11	4	14	2	"	17	September, '92	1
100	E. T. L., Jan, '90	30	Traumatism 2 1/2 "	1	6 1/2,	12	3	14	1 1/2	"	15	Left town.	3

SUMMARY.

The result of the treatment is noted under the heading, "Sequels, and Calibre of the Urethra When Discharged." The number of the electrode used is stated according to the French scale.

The enlargement of the calibre of the urethra by the electrolytic treatment:

Strictures which admitted no instrument were enlarged from No. 17 to 27 resp.
 Strictures which admitted a No. 4 instrument were enlarged from No. 14 to 29 resp.
 Strictures which admitted a No. 6 instrument were enlarged from No. 18 to 30 resp.
 Strictures which admitted a No. 7 instrument were enlarged from No. 16 to 20 resp.
 Strictures which admitted a No. 8 instrument were enlarged from No. 17 to 24 resp.

Strictures which admitted a No. 9 instrument were enlarged from No. 14 to 21 resp.
 Strictures which admitted a No. 11 instrument were enlarged from No. 15 to 30 resp.
 Strictures which admitted a No. 12 instrument were enlarged from No. 15 to 30 resp.
 Strictures which admitted a No. 13 instrument were enlarged to No. 18.
 Strictures which admitted a No. 14 instrument were enlarged from No. 20 to 30 resp.
 Strictures which admitted a No. 15 instrument were enlarged to No. 30.
 Strictures which admitted a No. 17 instrument were enlarged to No. 21.
 Strictures which admitted a No. 18 instrument were enlarged from No. 23 to 30 resp.
 Strictures which admitted a No. 20 instrument were enlarged from No. 24 to 29 resp.
 Strictures which admitted a No. 21 instrument were enlarged to No. 29.

The duration of the strictures at the time the patients presented themselves for treatment, varied from seven months to thirty years, as follows: Three cases of seven months' standing; four cases of nine months; twenty-two cases of one year; twenty cases of two years; thirteen cases of three years; three cases of four years; eight cases of five years; one case of six years; six cases of seven years; three cases of ten years; three cases of twelve years; three cases of fifteen years; two cases of seventeen years; three cases of twenty years; one case of twenty-four years; three cases of thirty years.

Percentage of single and multiple strictures: Single strictures, 66; multiple strictures, 34; total strictures in 100 patients, 143.

The number of strictures in one individual were: One stricture in 66 cases; two strictures in 24 cases; three strictures in 10 cases.

The location of the stricture was found in all parts of the urethra, from the meatus to more than seven inches from it as follows:

- At 1 inch or less than 2 inches from meatus, 9.
- At 2 inches or less than 3 inches from meatus, 17.
- At 3 inches or less than 4 inches from meatus, 22.
- At 4 inches or less than 5 inches from meatus, 34.
- At 5 inches or less than 6 inches from meatus, 31.
- At 6 inches or less than 7 inches from meatus, 21.
- At 7 inches or less than 8 inches from meatus, 7.

Situation.—The greatest number of strictures were from four to six inches from the meatus.

The length of time patients were under observation after treatment, varies from eleven months to 6½ years. The average time in this hundred cases was three years without the occurrence of a relapse.

NEW YORK, January, 1893.

THE ELECTRICAL TREATMENT OF STRICTURES.

By W. H. WALLING, M. D.

ESOPHAGEAL STRICTURE.

HAVING located and determined the calibre of the stricture, a suitable electrode, a little larger than the one that will pass, is dipped in carbolyzed glycerine and placed in position, and the stricture is acted upon with the negative galvanic current. The other pole may be placed at any

convenient place. A current strength of from five to twenty-five milliamperes may be used, according to the size of the electrode; the smaller the instrument, the weaker in proportion should be the current. If the stricture is of great extent, it will be better not to attempt to pass the electrode entirely through it at the first, and possibly the second, or even third sitting. Once through, however, subsequent operations should involve the whole tract. Great caution is to be observed in treating this locality, in order to avoid making a false passage. Very gentle force should be used during the preliminary examination, as well as in subsequent operations, up to the point of fully passing through the obstruction, and into the stomach.

Organic stricture must be carefully differentiated from hysterical simulation. A case came under my observation, some years ago, at the Polyclinic, in this city, where no stricture could be detected, although the patient stoutly insisted that there was one, and daily passed a good-sized bougie well into the stomach. In fact, he almost swallowed the whole of the instrument. The distal end must have reached nearly, if not quite, to the pylorus. As he could not be convinced that there was no obstruction, he continued to use his "supposed dilator."

Frequency of applications depends somewhat upon the intensity of the current used; if strong, say 20 to 25 ma. once a week, will be quite sufficient.

Objection has been made to this method of treatment on account of the near proximity of the pneumogastric nerve, but no unfavorable symptoms have occurred in any case under my own observation or treatment and I have seen none reported.

STENOSIS OF NASAL DUCT.

The writer has repeatedly urged electrolysis in the plan of dilatation by means of lead bougies left in situ. The lead bougie itself, properly insulated, would make an excellent electrode. Cocaine could be used previously if desired. Five ma. of current or even less would be sufficient.

CERVICAL STENOSIS.

This condition may or may not be classed as a stricture, but as cathodal

applications with olive tipped, insulated bougies are indicated, the condition may at least be alluded to. In many cases of dysmenorrhœa, electrolysis of the cervical canal will entirely overcome the difficulty.

STRICTURE OF THE RECTUM.

Having ascertained the size and extent of the stricture as nearly as possible, both by digital examination and with rectal bougies, proceed as in other strictures, to overcome it by the negative galvanic current. In some extreme conditions it may be impossible to insert even the smallest rectal bougie. In such case use whatever properly constructed instrument can be inserted, an urethral bougie for instance. For this purpose soften the hard rubber insulation over a mild flame or in hot water, and straighten the instrument as desired.

Having selected and inserted the size indicated, and attachments being made, turn on fifteen to twenty-five ma. of current, and go through the obstruction with a very gentle force. Having passed it draw the instrument slowly back through the stricture. The whole sitting may occupy ten minutes or more. If the stricture be very dense and extensive, it may not be practicable to pass the electrode entirely through it. This may take two or more sittings, but once through, bring the instrument back to normal tissue with the current still on, thus again acting upon the entire extent of the obstruction.

It should be borne in mind that we are now dealing with organic strictures, cicatricial tissue, or fibrous bands, not neoplastic growths. The latter demand an entirely different line of treatment.

Electrolysis of rectal strictures may be repeated every five to seven days, according to the current strength used, and the length of the sitting. Of course, larger and larger instruments should be used as the case progresses, until the lumen of the gut is of the desired size, or a satisfactory result reached.

STRICTURE OF THE URETHRA.

The first step in treatment is to locate and measure the obstruction and to ascertain whether there be more than one. Having done this, proceed as in other

strictures, to reduce it, or them by means of the negative galvanic current. We may not use so strong a current here, as in the rectum, five to ten ma. being sufficient. The indifferent electrode being in position, and the proper sized olive tipped, insulated bougie in readiness, dip the latter in carbolized glycerine, insert it to the stricture, turn on five ma. of current, and make very gentle pressure.

Most operators say, "Use no pressure whatever," but I have always used a little, it must be done, or you will act only upon one spot, and make no progress. Pass through the stricture if possible, return the instrument gently with the current still on, and then shut off the current and withdraw the electrode completely. It is better not to repeat the operation at the same sitting, but allow from three to five or more days between operations.

In selecting an instrument, always take one that is about two sizes larger than one that will readily pass the obstruction.

Linear electrolysis, or as I suppose, using an electrode with an acute edge, instead of a full bulb, has been practised and praised. Never having used the method, I cannot speak from experience regarding it. Theoretically I see no advantages over the older method. In fact I should prefer a full bulb, as it acts upon the whole surface at once, and as the process is an electrolytic one purely, the bulb electrode meets the requirements admirably. It is not within the province of this paper to go into the pathology or the etiology of strictures. These subjects are discussed thoroughly in the text-books, to which the reader is referred. I will say, however, that in my judgment the term "spasmodic stricture" should never be used. A spasm is not a stricture in the proper sense of the term in connection with electrolysis. Such a condition demands entirely different treatment. Reports of cases are also omitted as space does not permit.

The success that has attended the proper application of the galvanic cathode to organic strictures wherever located, has placed this method far in advance of the severe surgical, and uncertain dilatation procedures of the old school of surgeons. I could no more go back

to such old and barbarous methods, than I could resort to the still older plan of administering "ten and ten," with which I was familiar years ago. Ten grains of calomel and ten grains of jalap were then the regulation dose, popularly termed "gallop and trot." The combination did not belie its name.

Thanks to the advancement of science, *Electricity* and *Dosimetry*, twin sisters in higher medication, are now rapidly replacing the crude and uncertain methods of our fathers.

1606 GREEN STREET PHILADELPHIA PA.

ELECTROLYSIS FOR URETHRAL STRICTURE.

By F. H. WALLACE, A. M., M. D.

[Member Mass. Medical Society and American Electro-Therapeutic Association.]

SUCH a wordy warfare has been waged over the treatment of strictures of the male urethra, so much has been written both pro and con, since Dr. Newman first advocated kathodal electricity in their resolution, and so many learned urinary surgeons have condemned the operation as futile and a useless waste of time, that it seems presumptuous to dare to assert *that* SOME cases can be cured by this method: but I cannot refrain from speaking out in favor of an operation which has proved so generally successful in my practice.

The only valid objection I have heard urged against the operation is that it is useless and a waste of time, (the objection that "it will cause a cicatrix" can only occur by unskillful use of electricity); while, per contra, I think with justice we can claim at least five points in its favor.

1st. Avoidance of an operation under ether, which is not always unattended by harmful results.

2d. Patient can attend to daily duties, not being detained in treatment over ten minutes.

3d. No fever caused by the operation, as I have never had any untoward results in all my cases.

4th. No pain.

5th. Cure of accompanying gleet, which is not always accomplished in divisions.

Now all will admit that electricity

will cause the absolute disappearance of what Zeigler classes an analogous pathological formation, (I refer to fleshy excrescences on the skin), without leaving an ocular vestige on their former site.

Why then should we hesitate to acknowledge that stricture can be removed by identical means?

I claim that in the treatment of stricture by this therapeutic agent we must allow the same time and use the same care that we adopt in the removal of their analogue, for it is a common observation, in the use of electricity, that we see curative results, which we initiate, go on long after we leave off the treatment of a patient.

Another item of value, is *too* mild dosage, for patients vary much in their ability to bear electricity; and so I use it to the point of causing absolute discomfort.

When I first began to use electricity I erred in the too frequent repetition of the application, and to a certain extent defeated the object I wished to attain; that is, every second or third day I found injurious, and so for the last four (4) years adopted a period of ten to fourteen days between treatments as the most satisfactory. I will here present a case to illustrate the folly of frequent repetition. Mr. J. S., age 24, teamster, was sent to me by a druggist, who had been treating him for gleet for some three months, with no material benefit. On inspection found phimosis and a very profuse discharge of muco-pus. On sounding found two inches from meatus an annular stricture admitting only No. 17 French, one inch farther found another of No. 17 French. At patient's solicitation I treated him every other day to hasten a cure; with kathodal electricity 5 mil. amp. 3 minute seances. At the end of second week I found I had gained but two m. m., but the gleet was cured so far as I could see. But the patient became impatient and went to Mass. Gen. Hospital for divulsion, with what result I am unable to say. While I treated him I operated on the phimosis, the cure of which and the gleet I could credit myself with. From that time, which was Nov., 1888, I have always insisted that a patient should be under my care at the very least three months, as the sole con-

dition on which I would undertake the treatment, and I can frankly say I have not been disappointed in results. A case in point:

Mr. H. J., referred to me by Dr. Colman, of Lynn, in 1890, as one suitable for electrolysis. Age of patient 42, merchant, history of four attacks of gonorrhœa, the last in 1888, from which he had not entirely recovered, having a persistent gleet and some inability to urinate freely. On sounding, found only one stricture about two and a-half inches from the meatus, but the entire urethra was exceedingly sensitive. I used kathodal electricity (electrode No. 15, French), as strong as he could bear for five minutes, and ordered him to return in ten days. At that time, gleet less, not so sensitive, admitted No. 17 easily. I repeated the treatment at intervals of ten to fourteen days, until I had treated him eight (8) times, when I found gleet gone, not sensitive to passage of electrode into the bladder and the urethra admitted No. 31 easily; and to-day, January 11, 1893, I had the opportunity to examine and found no return of any of the former symptoms.

These two cases will illustrate the futility of assuring a patient of rapid results on the one hand, and on the other will give us the pleasure of confidence in a treatment, which deserves all that can be said in its behalf. In this paper I have taken for granted that our readers are familiar with all the minutæ of batteries, method of treatment, and proper electrodes, and also I have simply spoken of the hard, resilient strictures, and not those of a spasmodic character, or what has been termed membranous of crescentic shape, in which I have used anodal electricity with brilliant results in many cases.

ELECTRO-URETHRAL SURGERY.

By WILLIAM F. HUTCHINSON, A. M., M. D.

[Vice-Pres. Am. Electro-Therapeutic Association.—Fellow Société Electro-Thérapique Française, etc., etc.]

THE operation for radical cure of urethral stricture by electricity has now become standard, and is generally adopted wherever a specialist in electrical surgery can be reached.

It has been violently opposed, its rationale disputed, and its results denied only by a few men, whose ignorance of electrical law and electrical technique is equal to their genius for finding mare's nests of enormous proportions. Exactly in the ratio in which insensate opposition was borne down by reason and experiment, did this operation grow in favor, until to-day its popularity is only limited to the small number of experts whose technical knowledge and manual skill warrant them in expecting constant good results.

Since our number of THE TIMES AND REGISTER is given up to consideration of this item of surgery, I shall leave its history to another. It has already attained respectable age, for since I saw Mallet at work at Tripiet's clinique, in Rue Louis le Grand, a quarter of a century has passed, and he was not the first.

In this country, Dr. Robert Newman, of New York, and myself, conceived, or rather performed, the present operation at about the same time with success; but to my friend Newman the great part of whatever standing the procedure has gained is chiefly due. His steady enthusiasm, careful book-keeping, and wide opportunities as dispensary surgeon, soon threw my modest list into the rear, and I am glad to allow to him just precedence.

Yet something has been done here. During the last three years, my note book gives eighteen cases with uniform good results. That is to say, all were made better, two were permanently cured by a single operation, if there is any such thing as permanence in cure of urethral stricture; twelve were obliged to return for second and third applications of the current, after which they had no further trouble, and four are still with me. These eighteen cases were selected from fifty-one sent for operation, and were all that I deemed best to take. They presented typical, or nearly so, specimens of fibrous stenosis, were phlegmatic, not easily excited men of good general health, and had all tried various other methods of cure without avail.

The plan pursued at my rooms is as follows: All instruments are carefully sterilized in hot solution of corrosive sublimate, 1 to 1000, and placed in a basin of warm carbolized oil, comprising a full

set of olive tipped, hard rubber insulated bougies, with French numbers marked on electrical catches at distal end, and a meatus measure. They range from 11 to 33 of the scale, no larger nor any smaller having been needed, and I find that the usual sizes employed are between 24 and 31.

My patient comes in at nine in the morning, and sits quietly down while things are being gotten ready, watching arrangements and asking all manner of questions. At a quarter past, he stands before me, the body bare from waist to knees, and I inject the urethra full of an aqueous solution of thymol 1 to 50.

The negative pole of an Edison Lalande galvanic series is clamped in a catch of proper size bougie, determined by careful measure to flexible cord, and positive attached to a carbon disk, covered with absorbent cotton well wetted with a hot solution of iodic carbonate tightly held in hand. An experimental trial of sensitiveness of membrane is made by closing circuit through urethra to hand, and measuring just enough current with ammeter until a distinct sense of warmth is experienced, pleasant rather than disturbing. The current is then switched off and operation proper commenced. The bougie point is carried to stricture, where it brings up sharply, and is held against the resistance steadily, but with no more force than is needed to retain it in position. The same measured amperage is at once switched on, and, in a space of time, varying from four to ten minutes, the bougie point sinks into the obstruction with a feeling as if it were penetrating rather stiff mud. Manual pressure is promptly relaxed and the instrument slowly wins its way through, painlessly, and unaided by the operator's muscle, usually finishing the new route with a little jump. Current is then turned off, bougie passed into bladder to make sure of a clear way on, and the little operation is done.

Patient adjusts clothing, pays bill and leaves content. This is all there is of the procedure. I have never had urethral fever nor pain afterwards, rarely had reappearance of the disease and believe that it is, for selected cases, the only civilized way of treating it.

Within a week, I have heard from a

man upon whom I operated sixteen years ago, with number twenty-seven French, where number eleven could not be passed uncharged, who tells me that he has not since had any obstruction whatever.

I believe that more different kinds of results have been reached in this small thing than in any other surgical addendum that I know. Last week I received a letter from an Atlanta doctor, complaining that his galvanic battery wouldn't do in stricture although it had a very fine coil; that it almost killed his patient. Probably.

Another writes from Spokane Falls to say that his dry cell machine seems to be uncertain; has current enough at one time and none at another. I tell him to set it one side and get a couple of dozen Edison Lalande cells, charge them himself, go over them once a month and he will be ready for anything that urethral surgery calls for.

General practitioners rarely succeed well with any form of electrical service. Expecting that they can obtain from expensive instruments and gorgeous outfit the results that they read of in medical journals, they fail to reckon the years of careful study of electro-physics and constant practice of therapeutical currents of electricity that give a specialist his success, and so are disappointed. Next, these pretty cabinets, resenting steady disuse, grow poor in connection, or a wire is bodily eaten off; and time is too valuable to use in trying to repair an unfamiliar machine when old friend instruments are close at hand.

Electro-medical treatment is still more annoying to them, for it is slow, painstaking and long-continued, and it would be a wonder if their patience did not always, in place of sometimes, give out before the seductions of swift acting, independent drugs.

But in New England, at least, I have always found my colleagues courteous gentlemen, anxious to hear and see all they can of electro-therapeutics and surgery, willing to refer cases to me for special treatment, and appreciative of good work done.

As I have said elsewhere and often, electricity neither is nor at present promises to become a panacea. Its limits in medicine and surgery are comparatively

narrow and are not, in my experience, materially extending.

Yet, within these bounds, there are many things that can be better done by electrical aid than in any other way, and some, among them the cure of urethral stricture, which no other form of force, however deftly exercised, is worth mentioning in the same day beside.

ELECTRICITY IN STRICTURES.

By WILLIAM R. D. BLACKWOOD, M. D.

PHILADELPHIA.

I HAVE been using electrolysis in strictures of many varieties for twenty-five years—long before others reported their results. In making this statement I have no desire to claim that I am the discoverer of the method, for I believe that electricity was used in many departments of medicine and surgery empirically by charlatans when the regular profession was rapidly sneering at the supposed quackery thus displayed, just as it did in the line of the so-called "injection" method of treating hemorrhoids—the "injectors" all the while curing thousands of sufferers, specially out west.

My attention was called to the probable utility of electricity in stricture because it seemed such a good agent in reducing any form of muscular spasm, and it was in a case of spasmodic stricture of the female urethra that I first tried the method; and that plan then proved satisfactory, so much so, that I extended the method to the more common instances in the male victims. The prime difficulty at first was to secure a steady battery-current, and many of the failures now reported are due to this matter, for it is essential that the flow of force be absolutely direct and even in its nature; it won't do to have the current exert its power in jerks and jumps else the spasms (if such exist in the poor penitent) will be intensified, or produced if they do not. Then, again, the amount of force needed was unknown, and we were working largely in the dark for a long time; this caused many people to object to the method for the very proper reason that they suffered enough from what they already had without having new terrors thrust upon them—or, more correctly

speaking—into them. A galvanic burn is very hard to heal anywhere, and quite painful everywhere; I suppose it is just as bad in the urethra, and I know it is bad enough in the throat from personal experience. To prevent my readers from imagining that I had strictures in my esophagus, or thereabouts, I may state that the burns were experimentally received through trying the effect of electricity on herpetic blisters due to disordered stomach, this being in turn due to my indulgence in chicken-salad made from fowls with four legs, such as caterers shove on confiding patrons—to wit—what the Johnny Bulls term "weal." It was at a medical reception, too, which made the affront all the more disreputable.

After considerable experience, I got the hang of the business enough to make me feel that there was something in it, and much more so than some of my confreres were willing to accept, all of which did me no harm, for many a patient has come to me for trial of the plan after standing all that he could in the way of forcible bougieing, stretching, or sometimes cutting at the hands of my critics, and some of the best illustrations of the utility of electrolysis have followed in these instances.

In my opinion, almost any stricture can be certainly cured by electrolysis, with possibly the exclusion of those which are distinctly cartilaginous from age or mismanagement. Even a mass of gristle can be broken down, if time and patience is attainable, by persistent and thorough electrolysis. The best results, however, follow the early trial of the method after a stricture is found to exist. Most of the cases coming under my notice have been sequent to gonorrhœa, but some have undoubtedly had their genesis in masturbation; this, I think, was first brought to the attention of the profession by the late Samuel W. Gross, who worked the subject up very thoroughly. Others were dependent, so far as I could detect, on neither specific inflammation of the tract, or the effect of self-abuse. I don't see why stricture of the urethra cannot arise aside from such causes, any more than narrowing of the calibre of any other duct can—for instance, the lachrymal canal: this drainage tube undoubtedly becomes

too contracted to do its work at times, without there being any antecedent inflammatory provocation.

When a stricture comes to me for treatment, I set about the matter in this manner: first, the battery must be absolutely in good working order; next, the current must be positively uniform in direction and pressure; third, the instruments for localizing the electrolysis must be aseptic, and the urethra itself free from all gonococcus as far as can be ascertained. To this end I am in the habit of giving the patient an injection for some days prior to the procedure, and this wash is usually composed of bichloride of mercury or sulpho-carbolate of zinc—this latter salt having been a favorite with me for years before I began electrolysis for either stricture or gleet. I like, also, the use of camphor water as a vehicle, for its soothing effect; there is, as my readers probably know, good reason to avoid the use of cocaine in the urethra, for it has many times been provocative of very bad results when employed in even small quantities—why, I don't know. I have never used it in that neighborhood for any purpose.

The patient being ready, and the apparatus and accessories in good shape, I go about the work by gaining his confidence in the truth of the assurance that he is not to be hurt at all; I show him this by directing the current through his tongue-tip for a moment; through the eye upon the closed lid; through the ears from one to the other; through the fingers of one hand to those of the opposite. He thus learns that his perceptive faculties are unable to taste—to see—to hear—to feel the power to be applied, and if this is not sufficient to disarm his fears or suspicions, I send fifty times the current through some part of myself, which generally serves to satisfy him enough to allow a start to be made. I prefer to have the person recumbent, and I sit at his right side, because it is easier for me to handle the sounds in that attitude; he can stand, if he elects to do so, or if the seance is prolonged. Although I seldom use more than two sizes of bougies at a sitting, I have no hesitation in allowing the current to flow for half an hour continuously if the contracture is stubborn, or if a very low energy is needed in a susceptible patient. The amount varies from five to

fifteen milliamperes—the average being, I imagine (for I keep no account of this), say six. The size of the first electrical sound is the next higher number than that of the ordinary bougie which will pass through the first stricture without causing pain. For example—if the largest uninsulated bougie which will go through is No. 5, American, then I take No. 6 electrical to begin with. I use American gauges for everything in my electrical work—wire, screws, posts, foil, insulator material, etc., from patriotic motives, and I patronize Republican dealers altogether because of the same opinions.

Things being ready, I dip the sound into some boro-glyceride, or if the canal is tortuous, I inject the urethra with that fluid. A recently introduced agent—campho-phenique—is also very good as a lubricant. The sound having abutted against the malefactor, I turn on the current from zero to the amount desired, the *negative* pole forming the internal electrode, the positive being applied by the patient over the pubes or perineum, well back. I don't like the indifferent pole to be placed on the thigh, for instance, or off to one side, because it is important that the direction of the current flow be *through* the stricture from front to back, in other words, through the calibre of the urethra as nearly as may be. The reason is obvious. Although electricity when applied to any part of the body is diffused laterally, the main mass of energy is in the direction of axial lines between the applying electrodes (or external poles), hence the method of putting one sponge or disk on the femoral region, as is habitually done by every writer that I have any knowledge of, is wrong in principle; a great loss of current is occasioned thus. We must, if success is looked for, send the whole force "where it will do the most good;" *i. e.*, directly through the adventitious tissue itself, and by the shortest route. The post-anal point is, therefore, the ideal locality for the positive. The utmost gentleness is to be observed in the introduction of the sounds, and in the pressure used to keep them against the face of the stricture. It is not pressure that gets the instrument through the obstruction, it is the softening and disintegrating capability of galvanism that does the work. The bougie

is simply the agent for holding the current right in the objective point, and nothing else; it is not to be looked on at all as a stretcher, pushing it drives the urethra before it and nothing more; the stricture remains still the breakwater between the bladder and the open air, and the breaksound between the doctor and the vesical reservoir. If the patient feels the slightest degree of uneasiness, not to say burning, reduce the current at once, to nothing if needed, then slowly turn on more; hold the point of the sound firmly, yet gently, against the proximal aspect of the contracture till it slips through, which it generally does in a minute or less; then pass it toward the bladder till it enters that viscus or till it encounters another narrowing, which is quite likely to exist if the first be not further back than the penile fold. Drop the energy after the stricture is overcome, whilst getting toward the bladder to either nothing, or to quite a small power. The prostatic region is sometimes tender, so don't worry the man by unnecessary irritation. If the sound will not go through after a few minutes trial it is too large, take one two sizes smaller and begin anew. This will usually "get there;" and if you haven't been more than five minutes at it altogether, there is no risk run in trying one more size, the next higher. Then give him a rest for two days. Two styles of sounds are needed, one rigid and the other flexible, the first for straight and the second for corkscrew canals. The exposed part by which the current does its work should not be longer than a quarter of an inch; all the rest must be well insulated. Nobody's appliances are the better for use; you can take your ordinary bougies and insulate them with caoutchouc dissolved in benzine, letting each coat dry well before putting on the next. Test their want of conductivity by holding them in the hand under a strong current before using them in the urethra of any person; then scrape off the coat from the end to permit the flow to prevail. A loop of bare copper wire will suffice to hold the pin fast to the bougie at the end held by the operator, or he can simply hold it against the instrument in his hand whilst working. Of course the sets purchasable for use

are more convenient, but no one need wait for them if he comes across a suitable case when unprepared.

All subsequent work is conducted in the same manner; all points of the canal are worked over till the calibre is satisfactory to the physician (or, would it be well to call him surgeon?). When I am through with a case, I am in the habit of applying a low power current to the canal from end to end, as a sort of tonic; it may be a fad with me, but it has grown into a custom, and it does no harm anyhow.

In but one instance out of many hundreds now handled by myself, have I ever drawn a drop of blood; this was in the case of a man who had been under the care of a surgeon, noted for his radical manipulation of such disorders, and the urethra was so tender as to bleed on the slightest provocation. I finally cured him, however, and he remains well till this day, after several years of pretty wild living. I have never seen the method illustrated publicly except in one instance, when a noted practitioner from a neighboring village (in the sense that this locality is called by that pseudonym), demonstrated the maneuver before a class at a medical college. I had no opportunity to examine the patients, hence I do not know what the nature of their disorder was, nor how difficult the obstructions were to pass, but when I arrived at the amphitheatre the floor had quite a pool of blood at the foot of the place of torture; the man undergoing operation lost at least two or three tablespoonfuls of that vital fluid, and to me, the whole lesson was calculated to throw discredit on electrolysis as a practicable and desirable means of cure. Several students expressed in my hearing, their belief that the plan was a humbug; I regretted that they had no real chance to see what the actual merits of electrical treatment was, and I invited one or two of them to call at my office to witness the manipulation used there, but they never did show up, much to my chagrin, for I was, at that particular time, favorably situated to illustrate the value of electrolysis as compared with the ordinary style of treatment. I have been occasionally called on by some of the faculty to say something in reference to electrotherapy

before the classes, and I hope to be able to exhibit my own method to the young aspirants for the fame and worriments of a doctor's life.

Without being at all unduly enthusiastic about the matter, I hold that electricity is the most valuable agent in the hands of those competent to apply it in the positive cure of strictures of any tract accessible to the manipulation required. To succeed it is demanded of the operator that he has a thorough knowledge of electro-physics; no one is qualified to practice electrotherapy without it, despite the twaddle of some writers who throw about the subject rosy-colored and flippant generalities. The battery must be a good one, steady in flow, uniform in pressure, and easily controlled; *a meter is indispensable*; the combination of a battery and meter which shows a sort of waltz between zero and twenty in inches, then down to two and up to five, is N. G. By all means the ideal mechanism at our command now is the "Dry Cell Chloride of Silver" batteries built by the company in Baltimore, Md., and with their absolute steadiness, their constancy at any given point on the meter, and the knowledge that they are always up to the top notch, no matter how long it may have been since last used, one need never feel worried as to how the current will be when tested. The batteries of this make are always *semper paratus*; all you have to do is to couple them up, attend to the operative requirements, disconnect the accessories when through with your work, return the box to its wonted place, letting it stand on its bottom, its side, or its top, feeling perfectly safe that it will be all right when next called on for work.

I still have the first battery of this company's make which I obtained when the new style came on the market. It is of the so-called "fluid cell" style—that is, its electrolyte is a liquid, but the cells are of hard-rubber, and readily detached for renewal; so I use it to show friends the construction of the apparatus, and the only alteration in it is to employ the "dry-cell" electrolyte, which is essentially that first used, but now produced in a pasty form, the consistence being such as to prevent its running out if the cells are inverted.

I notice in the current number of the *Medical Summary* a contribution from Mr. Sample, of Chicago, in which he feels greatly incensed because of my advocacy of this battery, but as the article is too mixed in its grammar, English and metaphor, I must let any answer to it go. I cannot afford to spend money on any but the best apparatus obtainable, and I therefore stick to that here commended for all ordinary purposes; occasionally I employ the Leclanche, and I have given my reasons for so doing often enough in type to satisfy reasonable critics why I do it. There is, however, nothing to prevent anyone from buying anything in the electrical line if they care to do so, nor to stop their wasting time, money, clothing, carpets, etc., under the use of destructive fluids when all this can be avoided, and equally good results attained by other means.

246 NORTH TWENTIETH STREET.

ELECTRICITY IN THE TREATMENT OF URETHRAL STRICTURES.

By J. B. GREENE, M. D.

IN presenting this paper to the readers of the TIMES AND REGISTER, I do not intend to argue any of the complex questions that may arise as regards the action of electricity in general, or its action in the cure of strictures in particular. That it cures *I know*; as to its *modus operandi* I do not care to write, as that will doubtless be presented in a plain and easily understood manner by some one of the gentlemen who contribute to this number. I shall simply speak of a few points that I have learned by experience, and will present a case or two to show the results.

An advocate of the use of electricity in the treatment of any disease or condition, would be unjust to decry any other method, simply to bolster up ideas that he may have, and unless his experience is such as to convince him of the superiority of his method over all others, he is, as an honest man, compelled to grant his opponent a place in the field of experiment.

That many fail in the use of electricity, not only in the treatment of strictures, but in many other diseases, goes with-

out saying, but in all cases, or nearly all, the reason can be found. It is no unusual thing for a physician to say to me, that he has tried electricity as a remedy in strictures of the urethra, and failed with it. Upon inquiry I frequently find that the Faradic current has been used, or, if the galvanic, the dosage has been by the number of cells, often I am told that it has been used "strong enough to cause bleeding." Ignorance of electricity and batteries is more often the cause of failure than any other thing. Because "A" has failed, should we discredit the statement of "B," who claims to have had no failures?

Any good working galvanic battery will answer the calls of the practitioner, but a current controller and an ampere metre are as necessary to intelligent and successful use as is the battery. I sometimes think that the voltage should be taken into account as well as the ampereage, in other words I think a switch board an almost essential. With a battery of fifty cells we get a voltage ten times as great as with a battery of but five cells; we can with a rheostat properly adjusted cause the metre to show an ampere or a milli-ampere with the fifty cells,—with the five cells, through the same external resistance, we can get not over from five to seven milli-amperes. Now in the use of the full fifty cells, although controlled by the rheostat, are we not getting too great a voltage, *i. e.* is not the force so great as to change the character of the electrical action? I am not fully convinced that I am right, but the experiments I have made, show to me that a powerful voltage back of the rheostat, has made a difference in the treatment of cases markedly over the treatment with the same ampereage but with a far less voltage. Herein *may* be found the cause of some failures.

Pain is a factor in the successful use of electricity, or I should say, pain *ought not* to be a factor, for I hold that in the treatment of strictures by electricity, if pain is caused, or if blood is drawn, something is wrong, and that wrong should be sought for and rectified.

I am not in favor of the use of urethral injections of cocaine or any of the local anæsthetics; they do no good, and may do a vast deal of harm.

Of course it is understood that, in the treatment of urethral strictures by electricity, the negative electrode is introduced into the channel, and the positive applied to almost any part of the body. I have nothing to offer as to the bulbs as now used by operators in general, but I would impress upon the physician the desirability of a very large and wet sponge electrode as the positive. Too often the contact of the positive to the skin surface is too small, and is the cause of pain.

Whether all cases of stricture of the urethra can be cured by electricity or not, I am not prepared to say. I believe they can be so cured, still in a very small per cent. of cases it may fail.

The treatment by sounds or by cutting is often a failure, and I am inclined to the opinion that the treatment by electrolysis fails less often than either of the other methods named. I have had but one failure in a series of nearly two hundred cases, and that failure was caused more by the imperfect instruments than by the method *per se*.

Can an impermeable stricture, back of which is an urethral fistula, be cured by electricity? I answer, yes.

Case.—In March, 1890, I was consulted by J. S., a German, aged 30, occupation laborer. In 1876 he contracted gonorrhœa, which he allowed to run for six or more months, without any treatment. About that time he heard of nitrate of silver as an injection, and procuring a very strong solution he began its use. Notwithstanding the fact that a few hours after each injection, blood would flow from the urethra, and the inflammatory action was great and painful, he persisted in its use for some considerable time. A peri-urethral abscess finally showed itself, and a few days after it opened he noticed that urine flowed through it; it continued so to do until finally none passed via the anterior portion of the urethra; his condition remained about the same until in the winter of 1889-90, when he began to have cystic troubles, with frequent but small micturitions; it was for the bladder trouble that he consulted me. I tried faithfully to introduce a filiform through the urethra but could not; and closing of the fistula with the finger, and his at-

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tempting to pass urine through the meatus also failed. I then tried to inject water through the urethra from the meatus, but could not. I then began the treatment for stricture by electricity, beginning with eight cells and using six milliamperes within ten minutes. Although he said he suffered no pain, he grew very faint, and I desisted from further attempts that day. Two weeks after he again submitted to the current, and at the end of twenty minutes the bulb passed through the stricture, and easily continued until it entered the bladder; the bulb used was a No. 10f. I thereafter continued to treat him once each two weeks, each time increasing the size by two. When discharged in October, 1890, I could readily pass a No. 27f sound. The fistula was healed, and he claimed to be a well man. To-day, January 2nd, 1893, I examined him, and found that a No. 29f steel sound would enter the bladder without trouble, and he is in splendid general health.

Can a traumatic stricture be cured by electricity? Yes, cicatricial tissue is cicatricial tissue, nothing more—nothing less, and as amenable to the kindly action of electricity as are the so-called non-traumatic varieties.

Case.—E. L. L.; American; aged 35; occupation, paper maker. In 1876, he contracted syphilis and gonorrhœa, and after undergoing treatment in many places and under various physicians, found, in 1880, that he had a stricture forming. In 1884, he went to Hot Springs, Ark., where he was cut for stricture with an Otis' urethrotome. For a year he appeared better, but soon thereafter noticed a gradual return of the stricture. It continued to grow worse, and when he consulted me in May, 1887, I found that I could only, with much care and trouble, introduce a filiform. I began by passing over the filiform as a guide, a No. 15f. Newman perforated bulb, and soon passed into the bladder, without pain or bleeding. The line of treatment was followed up with increasing sizes, once every fortnight, until he easily took a No. 23f. He then disappeared, and I heard nothing more of him until in November, 1892, when he walked into my office, saying he felt well, and thought he was well, but as he had a year before

contracted another clap, he wanted an examination, to see what condition he was in. Examination revealed a healthy urethra; a No. 26f. sound would pass down into the bladder of its own weight. I have seen him often since then, and he remains well—although not a Joseph in his morals.

The above case is particularly interesting from the fact of his having had a stricture that may have been of gonorrhœal origin, or may have been syphilitic (a syphilitic stricture of the urethra is as possible as a syphilitic stricture of the rectum). After cure by cutting, he had a new stricture, which we have every right to believe was caused by the knife—a traumatic stricture. After the cure of that stricture by electricity, he again contracted a gonorrhœa, and a year after the cure of the gonorrhœa, he presents himself with a urethral calibre three sizes larger than when he quit treatment.

In a private letter to Dr. Robert Newman, of New York, under date of March 17th, 1890, I gave him an account of a case treated in 1884. In 1889, the patient died, and a post mortem examination, in the presence of Dr. R. T. Van Pelt, (then) of this city, and Drs. A. L. Wagner and C. W. Butterworth, of South Bend, showed perfectly healthy urethra, as well as a normal prostate. Prior to treatment, he had a hypertrophied prostate, together with more or less of the symptoms incident to that condition. Knowing of the prostatic disease, and considering that he was a man of seventy-three years of age, I could but give the credit of the cure to electricity.

MISHAWAKA, IND.

THE ELECTRIC LIGHT CONSIDERED FROM A HYGIENIC POINT OF VIEW.

By DR. J. MOUNT BLEYER.

[Surgeon to the N. Y. Throat and Nose Infirmary. Editor "Electrical Review," Medical Department.]

MY object in bringing this subject before the notice of the medical, electrical and other scientific bodies, is simply to show the great importance attached to it. Herein my intentions are to demonstrate why all other artificial lighting should be abolished from all dwellings of whatsoever kind and the electric light substituted.

"Without health, life is not life, it is only a state of languor and suffering, an image of death," says Rabelais.

In early times but a small fraction of our forefathers' lives was spent under artificial light. They rose with the sun and lay down to rest shortly after sunset. From that early period, as man has advanced in civilization, in the thirst for knowledge derived from books, and in following the gentle pursuits which demand an indoor life, there has been a steady increase in that fraction of our lives which is spent under light other than that of the sun.

But the improvement in the quality of the artificial light has been very slow. The ruddy lights and picturesque shadows so faithfully handed down to us in Rembrandt's pictures, show us very graphically what our poets have called "the dim glimmer of the taper," of those days. A few years before the introduction of gas, Argand, by his improvements in the burner of oil lamps, enabled our forefathers to see for the first time a comparatively white light.

Prior to the introduction of the electric light we had been accustomed to consider hours spent under artificial light as hours during which all conditions are less favorable to perfect health than they would be during daylight. Can we now hope to ameliorate this condition of things through the agency of electricity?

Before this question can be discussed, I must point out the chief differences which exist between hours of work or recreation spent in daylight and under artificial light. In the former case we live in abundance of light. The sunlight itself exercises a subtle influence on our bodies. That mixture of heating and chemical rays which, when analyzed form the solar spectrum and, combined, form the pure white light of daylight, is needed to enable all animal and vegetable organism to flourish in the fullest conditions of healthful life.

In nearly all cases when the sun is up the functions of life are in the state of fullest activity, and when it sets they sink into comparative repose. In daylight life works; in darkness life sleeps. In addition to the abundance of pure white light, the heat attending sunlight is necessary for health. On the other

side, when working under artificial light we have these conditions altered in degree.

1st. We have an insufficient light, as a scale of lighting by gas or by electricity, which would be pronounced excessive at night time, is still far inferior to average daylight.

2d. All artificial lights, whether produced by combustion, as in the case of candles, oil, gas and petroleum, or by the incandescence of a conductor by the means of electricity, produce heat. This heat, in proportion with the light afforded is enormously in excess of the heat given by sunlight. Electricity is far the best in this respect, but even it is inferior to sunlight.

3d. All these same illuminants, excepting electricity, contaminate the air and load it with carbonic acid, sulphur and other compounds, all injurious to the health and to the general comfort of the body.

What are the effects it has upon our health in general and our eyesight in particular? That proportion of colored rays which when combined, form white sunlight is that best suited to healthy life, is necessary for that sufficient and proper stimulus to the organic changes which go on in our bodies, and which we call a state of good health. The various artificial lights differ very widely from sunlight in this respect, that they are all more or less deficient in the rays at the violet end of the spectrum, commonly called the actinic rays, which most probably exercise a very powerful effect on the human body. It is the want of a due portion of these violet rays which makes all artificial light so yellow. Even the light of the electric arc, which is richer in these rays than any other, is still on the yellow side of sunlight. The incandescent electric light is next best in this respect. Next in order comes gas, petroleum and the various oil lamps.

Turning now to the comparative heating, air vitiating properties of artificial lights, which we shall find it convenient to take together, examine tables below, prepared by Dr. Freymolt Lidy, of London, which shows the oxygen consumed, the carbonic acid produced and the air vitiated by the combustion of certain bodies burnt so as to give the light of

twelve candle standard. Each candle burning at the rate of 120 grains per hour, are here given in the table below :

Burnt to give light of 12 candles equal to 120 grains per hour.	Cubic feet of oxygen consumed.	Cubic feet of air consumed.	Cubic feet of carbonic acid produced.
Cannel gas . . .	3.30	16.50	2.01
Common gas . . .	5.45	17.25	3.21
Sperm oil . . .	4.75	23.75	3.33
Benzole . . .	4.46	22.30	3.54
Paraffine . . .	6.81	34.05	4.50
Camphine . . .	6.65	33.25	4.77
Sperm candles . . .	7.57	37.85	5.77
Wax . . .	8.41	42.05	5.90
Stearic . . .	8.82	44.10	6.25
Tallow . . .	12.00	60.00	8.73
Electric light . . .	none.	none.	none.

Burnt to give light of 12 candles, equal to 120 grains per hour.	Cubic feet of air vitiated.	Heat produced in lbs. of water raised 10 deg. F.
Cannel gas . . .	217.50	195.0
Common gas . . .	343.25	278.6
Sperm oil . . .	356.75	233.5
Benzole . . .	376.30	232.6
Paraffine . . .	484.05	361.0
Camphine . . .	519.25	325.1
Sperm candles . . .	614.85	351.7
Wax . . .	632.25	383.1
Stearic . . .	669.10	374.7
Tallow . . .	933.00	505.4
Electric light . . .	none	13.8.

It is found not to be of unusual occurrence that the upper stratum of air of the rooms in which we live is heated to 120 degrees after the gas has been lighted for a few hours. If you look again at the table, you will see that each gas burner that we use consumes more oxygen, and gives off more carbonic acid, and otherwise unfits more air for breathing, than any human being, and it is this excessive heating and air vitiation combined which are the main causes of the injury to the health from working long hours under artificial light.

Many instances of the fearful state of the atmosphere of some of our public buildings, institutions, hospitals, shops, factories, and our private homes, after the gas or other lighting has been lighted for a few hours, could be given, but suffice it to say, that these points herein cited are facts proven experimentally. Thanks to the general introduction of electric lighting, it is already adopted in most of our modern public buildings, ocean steamers, new public hospitals, and other institutions, etc. But we still want its use more generally adopted. There is no doubt that the public has reached the

mature age of knowing and comprehending the value, both from a hygienic and practical point of view, that electric lighting has taken, and it must become the illuminant of the ages.

During a musical festival, held in Birmingham, England, Mr. Henry Lea, of that city, conducted some careful experiments. He found that when gas was used, the temperature near the ceiling rose from 60 degrees to 100 degrees, after three hours' lighting. The heating effect of the gas was, therefore, the same as if 4230 persons had been added to the full audience and orchestra of 3100. Similarly the vitiation of the air by carbonic acid was equal to that given off by the breathing of 3600 additional persons, added to the audience of 3000. But he found, on evenings when the electric light was used, the temperature rose only one and a half degrees during a seven hours' trial, and the air, of course, was vitiated only by the breathing of the audience.

We all know that the time when we suffer most from the effect of artificial light is in crowded places of public amusement which are at the same time brilliantly lighted. Many have been unable to go to the theatres, or attend evening performances of any kind where other lighting than electric is used, because of the intense headache which invariably attends or follows a stay in such places. This headache we can only say, is inseparable from the heat and glare of the gas. Now this phrase is not strictly correct. It is no doubt, due to the heat of the gas and its air-vitiating properties, and when we use the word glare, I believe we refer to the effect the gas light has upon our heads, which effect is not due to excess of light; on the contrary, I believe, if a good amount of light be given by the electric light, without the heating and air vitiation being present, such a headache is never produced.

Good light has good effects, even on the temperament. If the experiment is tried, in an assemblage of people, of gradually decreasing the lighting of the room, it will be found that the spirits of every one will be depressed, just as the light is depressed, and *vice versa*. From this fact the conclusion can be drawn that during the hours of waking every person is benefited by increase of

light up to full sunlight, providing that this high degree of lighting is not attended by heat and by air vitiation, and that the source of light must not be from one or two brilliant points only, but it must be well distributed and not such as to cause dark and deep shadows.

What effects has the electric light on the eyesight, as compared with other light?

Here is an important question to be answered. Healthy eyesight demands a plentiful supply of light. It is the greatest mistake to suppose that a state of semi-darkness is good for our eyes, unless they are defective, or recovering from the effects of injury or disease. We know that those whose professions or trades, as painters, engravers, printers, watch-makers, or, indeed, anyone, the quality of whose work depends on the excellence of their eyesight, desire a flood of pure white light thrown on their work. No fewer than nineteen-twentieths of the diseases of the eyes arise from working the eyes long hours with insufficient light.

Another great cause of injury to eyesight is the unsteadiness of most artificial light. Nevertheless, of the many improvements made in late years by the introduction of all kinds of gas burners, etc., these are not to be compared with the light of the incandescent electric lamp. The electric light is the greatest specific against the premature loss of the function of good eyesight and the premature use of spectacles.

I have made some observations lately, regarding the effect that the new illuminant has upon the voices of singers and actors during and after their performance. I find that out of thirty of the foremost singers and actors to whom I put the question, many informed me that since the introduction of the new light in the theatres, they are able to preserve their voice in much better condition, and are, by 50 per cent., more often in a good voice. They are remarkably cooler, don't perspire, are not husky while singing or acting. The atmosphere is much alike, and the temperature is equal through the whole building and dressing rooms. This has greatly diminished the risk of taking cold. Their throats are not parched and the voices not injured, in comparison

when performing in theatres and halls where gas light is still used.

It is useless for me to further enlarge on the many conditions of the electric light, as it indirectly affects health. I am here citing also the many additional pleasures the eye gets from its use. For instance, flowers in our rooms do not fade, and are seen in their true colors. Pictures and all colored objects are seen to better advantage. The possibility of being able to turn a flood of light into drawing and dining rooms, at six o'clock, on a winter's morning, and this without taking away the freshness of the air, so that the whole of the cleaning can be finished as thoroughly as if done by daylight, is one of great advantage to the house-keeper. Again, the good effect such a light has upon the health of our children is simply inestimable. No night lights, no matches, need be left about, no gas turned down low, or the fear of suffocation. A child can be trusted to press a button, and turn the light on or off. The doctor's consultation rooms gain a most welcome friend. The hospital advantages are many from its use. The lamps being high and out of reach, are not easily broken or overturned, and the air of the children's nursery, even if the light be kept burning the night through, remains pure throughout, and so with the invalid's rooms. Another very important point in favor of its use is the absence of heat, a very important factor to be considered. It is comparatively easy to thoroughly ventilate and cool, during the hot weather, a room or public place lighted by the electric light. Draughts, by its use, are entirely avoided.

With this mode of lighting, there is absolutely no danger to life, even if any accident happens to the wires, or any other unforeseen accident. As far as ornamentation of fixtures go, there are on the market designs suitable for any purpose, and manufacturers who are ready to design special orders. These electric fixtures which are now made, excel anything we have had or seen in the gas or any other illuminating conductors.

The only drawback is undoubtedly the slightly higher price over gas, but if it were a thoroughly acknowledged fact, that in paying the very slight difference for the electric light, the public were pay-

ing for health at the same time, and every hour of a man's life spent in a room lighted by gas, tended to shorten his life and abridge his powers of work, in time the public might change their minds sufficiently to cause them to spend their money on healthful light, as they are now so largely doing on the sanitary and other arrangements necessary to make healthful houses.

I simply bring this question up before you from a sanitary point to be considered as it is important enough to receive notice by the medical profession.

118 E. 16TH STREET, NEW YORK CITY.

STRICTURE OF THE MALE URETHRA AND ITS TREATMENT BY ELECTRICITY.

By CHAS. G. CANNADAY, M. D.

[Member of American Electro-Therapeutic Association, etc., etc.]

AS to the congestive forms of stricture following traumatism, as well as in acute gonorrhœa, I shall have little to say in this article; for while I am satisfied that it would be beneficial if properly applied, still the introduction of even the smallest instrument most carefully handled is productive of such an intense degree of pain, as to preclude any hopes whatever of this becoming at all popular either with the profession or the laity.

As to the spasmodic form of stricture of the male urethra, my experience in a practice of many years has not revealed to me the existence of a case of well defined spasmodic stricture that gave me anything more than temporary annoyance, and even if it should exist in a patient of mine, I would expect to find it due to some primary cause and treat that.

True organic stricture in the male is more frequent than is generally supposed, and is often responsible for slow recoveries from specific urethritis. It is often a source of constant annoyance both to the physician and patient, from time to time recurring and persisting in spite of the old treatment. In this condition the normal elasticity of the urethral tissue is replaced by inflammatory exudation, which finally results in excessive cicatricial tissue. The epithelium and submucous tissue, together with the corpora spongiosa and at times the corpora cavernosa, are involved in this specific

inflammation. Infiltration of tissues, by leucocytes interspersed with fibrinous and intercellular substance, is found. Certain blood vessels are obliterated and compression of others' walls occurs to such an extent as to impair the action of the unstriated muscular tissue; finally fatty degeneration ensues and numbers of the leucocytes break up and disappear, some of the cells elongate and become fusiform, while the intercellular substance increases and is branched into fibres; thereby obliterating blood vessels and impairing nutrition of tissue. This necessarily produces contraction of this excessive tissue and consequently a narrowing of the urethral canal, which may be unilateral, bilateral, annular or tortuous. It may be recent or of long standing.

The treatment of organic stricture by dilatation, either by bougies or steel dilators, has in my opinion a tendency to stretch, not the cicatricial tissue, but the tissue to which it is attached; which, having its normal elasticity still left, regains its original state, and the stricture returns. Thus the treatment by urethrotomy is based on the idea of *similia similibus curantur*: you make additional cicatricial tissue seeking to relieve a trouble due to this tissue's existence, and are forced to keep up dilatation during the patient's lifetime.

My treatment of stricture and chronic gonorrhœa for several years has been limited only to electricity, with the internal administration of the bichloride; though I am free to admit that, since refraining from injections for several weeks after gonorrhœa is contracted, and then using the weakest injections gently, stricture will be rarely met.

I am a firm believer in the developing powers of electricity (vide article read before American Electro-Therapeutic Association, in N. Y., Oct., 1892, and printed in N. Y. Journal of Obstetrics and Gynecology, vol. 2, page 1121), and it is to this I attribute its success in urethral stricture. It is in strictures of recent date that the results are best; if properly applied it gives tone and support to the walls of the vascular supply, stimulates the absorbents, and produces a determination (a bathing of tissues if you will) to the parts, thereby aiding in the absorption of inflammatory products, and

restoring the lumen of obliterated vessels. In deep strictures, those involving the prostatic and membranous portions of the urethra, together with the concomitant obliteration of certain ducts peculiar to that region, you may hope for your most satisfactory results.

My treatment of these cases is a modification of that first suggested by Newman. I use Newman's sounds, the smallest that will pass the strictures being used as a minimum, then attaching the next size to the wire from the negative pole, you introduce your sound to the stricture. The inactive pole (the positive), is long and covers the urethral side of the penis back to the perineum.

You turn on the current until your milliamperere registers from 3 to 5 m. in proportion to your patient's sensitiveness; with your left hand surrounding the penis and supporting it, you aid your right hand in gently pressing the sound through the structure. This will not be achieved often for a few minutes. Now gently reduce your current, withdraw your sound to within edge of strictured portion, and apply the faradic current, just sufficiently strong to not induce pain. The external electrode is kept at same place as with previous treatment, and the sound gently moved through stricture. These treatments I repeat twice a week and in some instances every 8 or 12 days, each case being a guide as to frequency and strength of current. From recent experiments I am certain that an urethral electrode to be used with the faradic current, both poles intra-urethral, will be of superior advantage to the treatment I have named; and the instrument is now in the hands of the maker and I hope to soon report as to its utility.

10½ SALEM AVE.

ELECTROLYSIS FOR URETHRAL STRICTURE.

By O. S. PHELPS, M. D.

I WILL cheerfully respond to your invitation to contribute something to the subject of electrolysis for the cure of urethral strictures. My attention was first called to this method of treatment by the writings of Dr. Robert Newman. The plan seemed to be at once philosophical, and in the hands of its eminent champion

highly successful. My own experience quite limited and confined to but five cases.

Case 1.—C.W., age 38, furniture truckman; had been very strong, able to carry heavy articles up several flights of stairs; came to me Dec. 2, 1891, complained of weak back, general nervousness and inability to pursue his vocation. At times he experienced great difficulty in voiding his urine.

Had been treated for malaria and "kidney trouble," (a term I am sorry to say often used by the family doctor in a very meaningless way). Eight years before had gonorrhœa: said he was cured at the time and has had no discharge since. I introduced a No. 18 American scale, 27 French, bulb bougie four inches, and then met an obstruction; smaller sizes were successively tried until No. 9 was reached, which passed (No. 9 American, 14 French). Then choosing a No. 10 A., 15 F. bulb electrode, the negative pole from 10 Axo cells was attached, and to the positive a felt electrode 6 in. square applied over the sacrum. The current was then turned on very gradually through a Massey rheostat to 3½ milliamperes, at which a slight sensation was perceived by the patient. The bulb was gently held against the stricture and in four minutes passed through.

In four days the patient returned and a No. 12 A., 18 F., was tried; this time the urethra was more tolerant and 4½ milliamperes used the same way as before—the bulb passed through in 4½ minutes without pain. Returned the fifth day, said urine passed very freely and he could then realize how much obstruction there had been—weak feeling in back all gone. Used No 13 A., 20 F., 3 milliamperes 3 minutes. Four days later, passed No. 15 A., 23 F., 4½ milliamperes, 4 minutes. Returned the sixth day, passed No. 16 A., 24 F., 3½ milliamperes 4½ minutes; four days elapsed and then passed No. 17 A., 26 F., 4 milliamperes, 4 minutes; five days later passed a No. 18 A., 27 F., 3½ milliamperes, 5 minutes. Patient did not return till two weeks, when No. 18 was again passed with 3 milliamperes in 2 minutes.

In four days No. 20 A., 30 F., was tried and passed with 4½ milliamperes in 5 minutes. I felt I had rather overdone

the matter, but five days later was able to pass the same electrode with $3\frac{1}{2}$ milliamperes of current in 4 minutes; this was repeated in six days, same electrode, 3 milliamperes, 2 minutes. The patient then decided he had all the room he needed, and as all of his nervous symptoms, backache, etc., had disappeared, declined further treatment. After two months a No. 20 sound passed readily, showing the urethra to be in *statu quo*. Saw him in Nov. '92, he reported no return of his former symptoms—did not make an examination.

Case II.—W. T., age 30, applied for treatment Feb. 20, 1892, complained of nervousness and general debility, and gave a history of urethritis ten years before. Four years ago was examined for stricture and an operation proposed. This he declined without consultation. The consultant who examined him said he had no stricture, and the matter was dropped. I examined him with a bulb bougie, and found a stricture at 3, and one at $5\frac{1}{2}$ inches. My patient was easily convinced of the presence of the strictures, and when the treatment by electrolysis was explained to him, and he was assured that it would be without pain, or any interference with his business he readily consented to treatment.

The largest bulb that would pass was a No. 12 A., 18 F. A No. 13 A., 20 F. was selected, and passed through both strictures in 6 minutes with 4 milliamperes, negative current. Fifth day a No. 14 A., 21 F., was passed in 8 minutes, $4\frac{1}{2}$ milliamperes.

Sixth day, a No. 16 A., 24 F., 5 milliamperes, 9 minutes. Four days later passed No. 18 A., 29 F. through both strictures, $4\frac{1}{2}$ milliamperes, 10 minutes. On his return in four days complained of some soreness—passed a No. 15, with positive current slowly through the strictures, which gave relief.

Four days later passed No. 18 again with negative current, $3\frac{1}{2}$ milliamperes, 5 minutes. Six days, passed a No. 19 A., 29 F., 4 milliamperes, 8 minutes. In four days passed a No. 20 A., 30 F., $4\frac{1}{2}$ milliamperes, $8\frac{1}{2}$ minutes.

Patient returned in two weeks, when a No. 20 sound was passed easily, and he was discharged. Has been seen frequently since, and no return of difficulty.

Case III.—C. A., aged 24, engineer, was operated on for stricture, two years before, by forcible dilatation, which gave some relief. Recently had much trouble in voiding urine, and a slight discharge of muco-pus.

May 15, 1892, introduced a No. 15 A., 23 F., bulb bougie; encountered a very sore place, one inch from meatus, under side. At $5\frac{1}{2}$ inches met an obstruction; not painful; tried a No. 10, which passed tightly. A No. 11 A., 17 F., was then passed, with 4 milliamperes negative current, in 3 minutes. Again, in four days, a No. 13 A., 20 F., was passed, with $4\frac{1}{2}$ milliamperes, in 5 minutes. As he complained each time of great soreness near the meatus, I applied a No. 15 bulb to the sore place, with 8 milliamperes positive current. Did not see him again for four weeks, when he returned with increase of the discharge and soreness. I then applied Dr. Newman's galvano-cautery sound, one strong flash. Patient returned in a week, all discharge and soreness gone. Resumed treatment of stricture; a No. 13 A., 20 F., passed stricture at $5\frac{1}{2}$ inches from meatus readily, without a galvanic current, showing it had remained the same. A No. 15 A., 23 F., was passed in 5 minutes, with 4 milliamperes negative current.

The case continued without incident till a No. 20 A., 30 F., was used, and patient discharged, cured. An interesting fact connected with this case, and, indeed, with a majority of those coming under my observation, is their having been treated for malaria; their symptoms having been mistaken for that condition.

Case IV.—J. J. T., age 22, consulted me June 22, 1892, for general debility and pain in the back, which would, at times, become very acute, and often reflected through to the bowels below umbilicus. Relief was sought at the hands of his physician, and temporarily obtained by subcutaneous injections of morphia. He had a very small meatus, and a history of former gonorrhoeas, which led me to think he might have one or more strictures, though he did not complain of any difficulty in voiding his urine. The meatus would not admit a No. 9 A., 14 F., bulb bougie.

Applied 8 per cent. solution cocaine, and enlarged meatus with bistoury sufficient to pass a No. 21 A., 32 F., sound. At three inches from meatus, sound would pass no further; caused great pain, cold perspiration, and faintness. A No. 9 A., 14 F., bulb electrode was gently passed down to the bladder, with 2 milliamperes positive current, which relieved the pain. Repeated this for several days, till the oversensitiveness was gone. Three strictures were then found, at 3, 4 and 6 inches from meatus, through which a No. 12 would pass tightly. A No. 13 A., 20 F., was then passed, with 4 milliamperes negative current, in 10 minutes, without pain. Patient returned the fourth day, and said he felt like a new man; all of his reflex pain had disappeared. Treatment was continued without incident at from four to six day intervals, till No. 20 A., 30 F., passed freely.

Case V.—W. S., fireman, age 25. Applied December 11, 1892, for treatment for gleet, the sequel of a recent gonorrhœa. Gave history of several previous attacks, and considerable difficulty in voiding his urine, particularly if he drank beer prior to his last urethritis. Meatus very small, scarcely admitting a No. 9 A., 14 F.; enlarged it so that No. 21 would pass; found two strictures at $3\frac{1}{2}$ and 5 inches. Passed, rather tightly, a No. 9 A., 14 F., bulb electrode. This caused considerable pain, and before withdrawing it, attached a positive pole, with 3 milliamperes galvanic current, and gently and slowly withdrew it, which relieved the pain, and, for the time being, the discharge. On his return, four days later, patient thought he was well, only for the unhealed meatus, which was kept open with a sound. Introduced No. 9 again; positive current; 3 milliamperes; one-half minute at each stricture; much less soreness. Four days later, could pass No. 9 without pain. I then introduced No. 11 A., 17 F., with 4 milliamperes, negative current, and passed both strictures in 9 minutes. The case has advanced smoothly to date, January 11; passed a No. 19 A., 29 F., with 4 milliamperes, in 7 minutes.

I report these cases in detail, not because there is anything new or remarkable about them, except it be in the sim-

licity of the treatment, and the uniformity of results.

I have followed closely the lines marked out by Dr. Newman, and it has only been when I have departed from them in using too high a current, or a little too much pressure upon the electrode, or proceeding when there was too much sensitiveness of the urethra, that I have met with any trouble whatever.

I have found the maxim of a former and much revered teacher, Dr. Cordyn L. Ford, "Make haste slowly," is especially "golden" in the treatment of urethral stricture by electrolysis.

143 WEST 131ST STREET, NEW YORK.

News.

The Pope Mfg. Co., of Boston, sends out a neat and useful calendar for the desk.

A very convenient little calendar and diary combined is issued by Fred'k Stearns & Co. It is called the "*Daily Reminder*," and is designed as an aid to the memory, by noting engagements that are apt to be otherwise forgotten.

In THE TIMES AND REGISTER of December 31 appeared a note concerning Piperazin, the latter part of which was inserted by one of those annoying mistakes that occur in every journal occasionally. The manufacturer of the drug in question is E. Schering, and their agents in America are Lehn & Fink. Messrs. W. H. Schieffelin & Co. are in no way responsible for the mistake, which occurred in this office.

The "American Text Book of Surgery," edited by Professors Keen and White, of Philadelphia, which has only been issued a few months, is already a phenomenal success. It has been adopted as a "Text Book" by forty-nine of our leading medical colleges and universities. Nearly five thousand copies have been placed in physicians' libraries, and every indication points to a sale of at least as many copies more in the next six months.

A new disinfectant denominated kresin has been brought out by Schering and Glatz. It is said to be efficient, non-corrosive and comparatively safe.

The pharmaceutical pig has disappeared from the medical journals, for which we are duly thankful. But its place is more than filled by an artistic atrocity representing an obese steer, whose ungainly form disfigures the pages of our Western contemporaries. Why cannot an advertiser devise something that will attract the attention and yet not offend the eye of taste?

An American text-book of the medical and surgical diseases of children is announced as in preparation by Mr. Saunders's house. Sixty-two names are listed as authors, embracing men from all parts of the United States.

William Mawhor, of considerable wealth and good standing, residing in Sidney, Iowa, has been charged with poisoning his wife with strychnine. It is said that of his four former wives, three died with symptoms similar to those shown by the last one, in whose stomach the State Chemist has found strychnine in large amounts. Mawhor is a native of Ireland.

Dr. Boardman Reid, of Atlantic City, intends to spend the winter at Thomasville, Ga.

The N. Y. *Medical Times* suggests that a tax shall be laid on quacks and quack remedies. England raises a large income from taxes on patent medicines; and when one reflects on the enormous sums paid by the people to the Jaynes, Warners, etc., it seems no more than right that they should be taxed at least as heavily as the whisky and tobacco trades. Men will persist in pouring drugs of which they know nothing into bodies of which they know less; and since individual liberty requires this, by all means let them enjoy it. But those who furnish the poison ought to pay for the privilege.

Dr. Bryant, of the New York Board of Health, recommends the substitution of wire mattresses for the textile substances now used in lodging houses. The recommendation is a good one, but should be made in summer, to secure general acceptance. In the tropics no mattress is used but the woven wire frame, with a blanket on it. For com-

fort, coolness, ventilation and cleanliness it cannot be excelled.

The *London Spectator* says Cleopatra was a hypnotist. Not more than every other pretty woman.

In *The Sanitarian*, Dr. Bell effectually disposes of the plea that rags do not transmit cholera. According to Mr. Augustus Smith, clothing offers the most usual and convenient means for the transmission of cholera; but when the clothing has ceased to be such, and is classified as rags, the danger has passed away. We trust that the authorities will not be misled by such whimsical pleading, but will continue the prohibition of the importation of foreign rags as long as cholera continues to infest any part of Europe.

THE *Doctor's Weekly* is to reappear as the *N. Y. Polyclinic*, with the faculty of that institution as editors. This is commendable. King is a Hercules for work; but to successfully edit and manage a medical weekly is too much for any man to undertake.

A Belgian surgeon has immortalized himself by performing laparotomy on two cholera patients and washing them out with sublimate. The patients died promptly.

New York City has over 2300 medical students, Philadelphia, 1774, and Chicago, 1297.

Castration, of men, for melancholia, is reported to be successful. There is little doubt that this operation would be effectual as a prophylactic.

Caviare destroys the cholera bacillus. But perhaps some less radical remedy than this will be discovered.

Berlin has 183 policlinics.

A NEW DYE FOR THE HAIR.—Aterin has been suggested as a possibly valuable dye for the hair. It has extraordinary coloring power for organic fibers, and is quite free from toxic action. The fatty substances must be first removed, when any organic fiber will take up the color readily. Any shade, from flaxen to black, may be produced, by varying the strength and number of applications. Several applications of the pure solution are required to produce black tones.

The Times and Register.

A Weekly Journal for Medicine and Surgery.

WILLIAM F. WAUGH, A. M., M. D.,

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QUARANTINE.

DR. C. W. CHANCELLOR, of Baltimore, writes strongly against the system of quarantine that implies seclusion; and in his eyes, national quarantine implies national seclusion. There is, however, a broad distinction to be made between what ought to be and what is. Had we the well-equipped system of municipal sanitation for many years in practical operation in England, we, too, could open our doors and bid defiance to the invading bacillus. But, while some of our seaboard cities have really efficient sanitary departments, this cannot be said to be the case in *all* our ports to which infection may be brought. Local quarantine means the carrying out of local, or rather personal, views; and this means the necessity of internal quarantines. For, if New York believes that foreign rags are harmless, and allows their free importation, while Philadelphia prohibits such admission, the latter city must equally prohibit

the introduction of rags from New York to be consistent, as the foreign rags may be among them. And while New York forestalls the expected emergency by increasing her inspecting staff by twenty-five and thirty at a time, Philadelphia provides for the same danger by cutting her overworked staff of fifteen down to eight. This, again, is the fault of Councils, without whose consent the Health Board cannot purchase a paper of pins; while the New York Health Board is a department, and can, if need be, issue bonds and raise what funds are required for sanitary work.

We have watched with interest the discussion of local versus national quarantine, and have not seen, as yet, any valid objections against the latter. Local boards may be efficient, and they may not. They certainly prefer to exercise the authority themselves, as is quite natural; but until the country at large has learned to appreciate the value of hygienic work much better than is now done in Philadelphia, the general safety is best secured by the administration of quarantine by the general government.

Annotations.

MEDICINE VIBRATOIRE. — (Progrès Médical). A neurologist who follows the fashion has to make a marvellous display of all sorts of machines, more or less mysterious to the patients. The Salpêtrière, at Paris, introduces a new sort of apparatus for the treatment of nervous affections (Paralysis agitans, hysteria, neurasthenia, insomnia, etc.), by vibration of the whole body or of the head alone, producing up to 600 vibrations a minute. M. Charcot knew that many patients with paralysis agitans are very favorably influenced by the vibrating movement of the railway cars; as early as 1873. M. Vigouroux had shown that the vibration of an enormous tuning-fork on a sounding-board has the same curative influence as the metals, the

magnet, and static electricity, that it cures rapidly hemianesthesia and contractures. Before very long the Salpetriere will get a kind of branch-office at Lourdes, as the miracles of this famous place have the same good effect on those cases. They will rather do this than recognize the facts and explanation given by the results of hypnotism, as used by the school of Nancy and great numbers of reliable men in France and elsewhere.

AD. MEYER, M. D.

470 W. MADISON ST. CHICAGO, Jan. 6, 1893.

ELECTRICITY AS A UTERUS DEVELOPER.—(A paper read before the American Electro Therapeutic Association.)—C. G. Cannaday treats of the use of the negative galvanic pole, with faradization, in developing the uterus. Faradization develops the muscular tissue and the involuntary fibers of the vessel-walls. Galvanism causes a determination of blood to the part stimulated, affording increased pabulum for nutrition. To be successful the treatment must be frequently applied and continued for months. As corroborating his views, he quoted cases of epilepsy of developing puberty, hysteria of development, dysmenorrhoeal hysteria and dysmenorrhoea and sterility cured by electricity. In three other cases of dysmenorrhoea with undeveloped uterus, cures were obtained from electricity when drug treatment failed.

THE *Medical Review* expresses doubts as to whether the recent epidemic in St. Louis was really typhoid fever, and denies the responsibility of the city water for it. The vegetable supply of St. Louis is condemned, and the *Review* states that East St. Louis, drinking river water, but obtaining better vegetables and fruit (why so?) had only a few cases, and those acquired in St. Louis. The reasons assigned for the view that the epidemic was not typhoid are, its course, symptoms, low fatality, short duration, excessively high fever and subnormal temperature. Stercoremia, Dumesnil pronounces it; from the use of decomposed vegetable matter.

Nothing but the microscope will settle the question.

NATIONAL, VERSUS STATE QUARANTINE.

IN discussing the question of quarantine, from the sanitary standpoint, it is not our purpose to consider it from a political view; but, when a concentrated move is made by the cunning, medical strategists and shrewd diplomats, for the purpose of centralizing authority, and conferring on a single man, in this great Republic of ours, the unlimited powers of an autocrat, it is time that the independent, liberty-loving element in the profession stood up as one man, and denounced this proposition in such unmistakable language as would leave no doubt as to their convictions on this subject.

The wars of the Revolution and the Rebellion, for once and for all time, let us hope, crushed the last vestige of so-called paternal government.

This nation needs no liveried sinecurist in the cabinet. The states are amply competent to guard their ports of entry against epidemics.

Open wide the gates, then, and let the myriads of hungry, unfortunate, poverty-stricken creatures of paternal Europe come. Let it not be forgotten by those who now clamor so loudly against emigration, that they themselves are but trespassers and squatters; for this country, by natural and any other right, belongs to the red man.

But, before we seriously consider the question of national defense against cholera, and press on in the mad race after phantoms, let us seriously inquire: Is this malady contagious, at all; in any other sense than is typhoid fever? There certainly isn't a scintilla of proof, notwithstanding the frenzy of fright which struck New York, and was spreading westward, that there was a single case which developed from supposed cholera sources. It appears that with three of the cases of death alleged to have followed from Asiatic cholera, not one of them had been within miles of the condemned ships lying in the harbor. As a matter of fact, the vital statistics of New York for 1892 show many less deaths than in 1891, from choleraic diseases.

Let us see what they were doing in Europe while our president was about to

issue a proclamation against immigration and thereby strike a clipping blow at all our maritime industries. Stopping at Albion, we find here, though more than three thousand miles nearer Hamburg, with her stupendous commercial marine, pursuing her usual serene course, her harbor-indented coast open to the entire world, without even a thought on the quarantine question. And who heard of cholera giving Johnny Bull any alarm as to plague-stricken cities in England; while the cholera-nostras scare had Uncle Sam shaking in his boots?

Let us give the poor emigrants a show, enough of good food, pure air, ample clothing, with an abundance of soap and water, and the science of quarantine will quickly become obsolete, and be interesting to the student of the future from a historical standpoint only.

OUR readers are to-day presented a number of valuable and interesting articles upon the treatment of strictures by electrolysis; written by those who have tested the method and are using it. Possibly, we may hear from the other side of the house, and at some future time put together a special on the older methods of treating stricture. We have several other specials in preparation, but do not care to commit ourselves to the publication of any until the material is actually in our hands. In the mean time our readers will not suffer, as our editorial table is covered with original papers in number and value exceeding anything in the history of the journal.

WE lay before our readers to-day both sides of the quarantine question, as presented by two members of our staff. One favors national, the other local, quarantine. There are cogent arguments on both sides, and our readers may constitute themselves the jury.

Letters to the Editor.

I HAVE used galvanism in the treatment of stricture of the urethra during the last ten years, with the negative pole always in the urethra, and the positive in the hand or on the nape.

My application of the current differs somewhat from that commonly adopted. Instead of a bulbous electrode with an insulated stem, I use an ordinary, slightly conical, steel bougie, of the largest size that can be passed through the stricture. The instrument is pushed into the stricture until it sticks firmly, and then the current is turned on. The current invariably leaves the body at the point where the urethra holds the instrument most tightly as is indicated by the patients' sensations.

The strength of the current is regulated so as to produce only a very slight stinging or burning sensation, and this varies from two to five milliamperes. The application is continued about five minutes, and repeated at intervals of four or five days.

In this method dilatation is combined with electrolysis; and the result is undoubtedly better than when either is used alone.

My experience has convinced me that electricity used in this way is a valuable auxiliary to the treatment of stricture by dilatation, and on the other hand that it does not possess the magical solvent power in the urethra which some writers claim for it, independently of simultaneous dilatation. It also exerts a very salutary influence upon the irritable condition of the whole genital tract which so often accompanies strictures, as it is so well known to do in similar conditions of the genitals in the female.

Aside from these effects I have not been able to discover any advantage in the use of electricity in the treatment of stricture.

DAN'L B. D. BEAVER, M.D.
READING, PA.

ELECTRICITY has, with me, become a routine treatment for strictures of all kinds, urethral, rectal, cervical, etc.

I employ various forms of electrodes, some of my own invention, but I find one just about as good as another, provided it is properly placed and the active portion is of a conical shape.

I use a low ampereage not exceeding 5 ms. Have never had any unpleasant consequences, and am pleased with the results.

I have nothing to add to the rules for

this application of electricity, which are already well-known to the profession, and it would be useless to waste space recounting cases devoid of special interest.

R. G. NUNN.

SAVANNAH, GA.

I HAVE no faith whatever in the value of electricity in the treatment of urethral strictures. I have, I confess, never made use of electricity for this purpose, because it is out of my line of practice. But from my skepticism as to its value in chronic and incurable disorders of the central venous system, it is but a step to be skeptical as to its value in inflammatory or sclerotic processes elsewhere. I should as soon think of hanging a magnet to a penis to cure the stricture as to employ electricity.

F. PETERSON.

NEW YORK.

MY experience with electricity in urethral stricture is limited to one case in which I used 25 milliamperes for 10 minutes on three consecutive days in stricture near the meatus. The negative current was used. The stricture admitted only 14 French. After treatment 28 Fr. passed freely.

J. M. HAYS, M. D.

OXFORD, N. C.

RAILWAY SURGERY.

THE *Medical Record* of December 17 contains an editorial on "Railway Surgery." It is really edifying to see the editor of the *Record* make such final disposition of railway surgeons. The editor is correct when he says that "a fracture, a sprain, a lacerated wound, cannot have any specific qualities because they were produced during a railway collision." But in the sentence following we cannot agree with the writer, believing that the man who is to do railway surgery needs special training for the work. Our surgeons of to-day receive their patients on the table ready for the operation with a staff of assistants about them, and everything that science can suggest to make their efforts successful. How often does the

railway surgeon of to-day find himself compelled to operate at the scene of the wreck, and is his patient ever brought to him on a clean table by half a dozen clean assistants? No, the railway surgeon often finds his patient pinned down by portions of the wreck, or under his engine in the ditch. Here then he must have a cool head and use tact and judgment in improvising such measures as are necessary to meet the demands of every case. "He is not an independent professional man, but is the employee of a corporation and the servant of the same." Truly the railway surgeon "is not independent;" "he is an employee" and "a servant" in exactly the same sense as any other practitioner is when he examines a patient in his office and prescribes for him and no more. Railway surgeons are paid for services rendered the same as other surgeons. Finally, "associations of railway surgeons have, therefore, their special function in studying the business part of their profession, not the scientific." Certainly the writer of this editorial could not have visited the last meeting of the New York State Association of Railway Surgeons, where one of the most scientific programmes of the day was carried out. Of late we had the pleasure of looking over the programme of the next meeting of the National Association of Railway Surgeons, to be held at Omaha, Neb., next May, and find that thirteen papers are being prepared on a special topic: "*Injuries to the Cord and Its Envelopes, Without Fracture of the Spine*," by such surgeons as N. Senn, of Chicago; Geo. Chaffee, of Brooklyn; W. B. Outten, of St. Louis, and others of national reputation. Railway surgery has come to stay. It has taken firm root in the East. Dr. Chaffee, of Brooklyn, has the reputation of finishing whatever he starts out to do. It is not difficult to read between the lines of his address, an abstract of which appears in this issue, that when the proper time comes he will be the leader in establishing a railway hospital in New York City, and as the doctor shows his friends through the wards they will have a chance of seeing for themselves that there is such a thing as "railway surgery."

The Medical Digest.

FORMULARY.—I. Fissures of the nipple :

Tr. benz. comp 15 drops
Olive oil 2 drs.
Lanoline 6 drs.

Apply after nursing.

—Thomas.

2. Ulcers :

Powd. camphor 100 grs.
Subnit. bismuth 400 grs.
Salicylic acid 400 grs.
Iodoform 1100 grs.

Reduce to fine powder. Apply to ulcerated surfaces.

—Rev. de Clinique.

3. Pulmonary Phthisis—Masche :

Eucalyptol 20 parts
Creosote 8 parts
Alcohol 90% 72 parts

One to two teaspoonfuls in a pint of water. Use as inhalation.

—I. Union Med. du Canada.

ALTERATION IN CHARACTER OF CONDENSED MILK.—Cassedebat (Rev. de Hygiene). Certain samples presented the form of a paste, of a cheesy consistency, and a rancid odor and taste. Bacteriological examinations giving negative results, the change appears to be a consequence of physical causes, brought about by the evaporation of the liquid portions, from a defective can. The author proposes to substitute for the metal can, a glass box, and to close it by a sterilized cork, covered with some substance impenetrable by air and moisture.

THE PRACTICE OF MEDICINE IN CHINA.—The day of a Chinese physician commences at day-break. He receives patients. At 10 A. M., he goes to visit patients whose names appear on his slate. The patient hangs up at his door a placard containing the name of his doctor, a proceeding rendered necessary on account of the want of house numbers. The physician is received with the greatest reverence, he is offered tea, a pipe, etc., before examining his patient. If the patient is a male, he seats himself in front of him; if a female, a bamboo screen is interposed, which is withdrawn when the physician wishes to examine the tongue. The right hand of the pa-

tient is extended on a book, and the physician places three fingers on the pulse, and counts it without using a watch. The operation is then repeated on the other hand. He (the doctor) then asks other questions, and then a pen and ink is brought. The prescription is written, consisting chiefly of vegetable drugs, and then carried to the apothecary. If the patient be a mandarin, or wealthy, the diagnosis, prognosis, treatment, etc., is given in writing; otherwise, verbally. The fee is wrapped in red paper, and varies according to the station of the patient. If the physician is not successful, a consultation with one, or several, takes place; and if the patient then gets no better, the aid of a divinity, possessing curative powers (?) is invoked.—*Rev. Gen —La France Med.*

THE ANTISEPTIC TREATMENT OF ACUTE METRITIS.—Labadie-Lagrave.—There are two indications to be fulfilled. 1st. To re-establish the calibre of the cervical canal, obliterated by the inflamed mucous membrane. 2nd. To realize uterine antiseptics.

For the first indication, commence by rendering the vagina antiseptic by injections of sublimate solution (two per cent), twice daily (b). Dilatation with antiseptic laminaria tents, followed by an antiseptic irrigation, and tamponing with sublimate cotton. This dilatation, etc., to be repeated daily until the canal is re-established.

Second indication, to realize uterine antiseptics.—For this end, daily tamponing with strips of iodoform gauze, moistened with creosoted glycerine.

This method is applied only in recent and acute metritis where it is possible to bring the antiseptics in contact with the mucous membrane at all points. Otherwise, curetting will be indicated.—*Jour. de Med. de Bordeaux.*

HYPOPHOSPHITES IN TUBERCULOSIS.—Without fear of contradiction, it may be asserted that tissue building—the establishing of healthy cell life—is the foundation treatment of every case of tuberculosis, not only in the incipency, but in the advanced stages as well.

This proposition is not antagonistic to the germ theory; rather has the

knowledge of the existence and important role of the bacillus led us to a better understanding of the necessity of proper nutrition.

Nutrition is a *sine qua non* in all cases of tuberculosis. In some instances its necessity is more evident than in others; in acute cases other needs may be more urgent, but the rule holds good, the tuberculous must be nourished.

Feeding is not nutrition. The best of diet may not be assimilated—may do harm rather than good. The practice of stuffing, so honestly advocated by some authors not long ago, has been rapidly abandoned. Years ago every case of phthisis got a bottle of cod-liver oil; now it is given only to selected cases. Nutrients are chosen which can be appropriated and the food is given in such a manner and of such kinds as may easily induce complete assimilation.

There must be a demand for nutrition before assimilation can be satisfactorily performed. There must be the ability to appropriate food that is taken, else the defective cell in a remote part of the system will profit little thereby. Just here, I believe is an important point in the treatment of tuberculosis. The best of food and the most reliable nutrients are taken and still the waste, in many cases, goes on. There is either want of assimilation, or a want of gain from the process.

There is need for "respiratory food" as well as for that in the alimentary tract. Oxygen must be taken into the system and the cells empowered to use it in the nutritive changes which we aim to accomplish by proper feeding. Deep breathing—pneumatic devices, and the inhalation of oxygen, may do much to supply this element of nutrition, but not infrequently the system seems as unable to appropriate oxygen as it is to utilize the food which passes through the stomach and intestines. Whether the lessening of tissue oxidization is due to a diminution of oxidizable phosphorus (Churchill), or to cell change, or to some other cause, the lessening of nervous energy is certainly a factor in the hindrance of oxidation and consequently of assimilation. Indeed some authors (Holland and others) claim that pulmonary consumption is a neurosis. At any rate, if oxygen

gets no further than the lungs, and food no farther than the alimentary tract, there can be no assimilation, no building up and tearing down, no hindrance of destructive change and repair of injury.—Porter, *The Clinique*.

A NEW TREATMENT OF HEMORRHOIDS.—A Holland physician, Dr. Aghina, treats this complaint in the following manner: Fix at the extremity of a female sound a condom, and at the other end a rubber bulb furnished with a stop-cock. After carefully cleaning the rectum by washing and a purgative of citrate of magnesia, let the patient recline on the bed for some hours. Then introduce the catheter, covered by the condom, into the rectum, in such a manner that it penetrates above the internal sphincter, then the membranous bag is inflated with air and the stop-cock closed. The dilated veins are compressed by the distended bag, and they soon, according to M. Aghina, take their normal volume, provided the compression is maintained for a sufficiently long time. This operation should be repeated after each defecation, and the patient should rest in bed for fifteen days at least. The author has obtained excellent results by this proceeding, and he does not hesitate to discountenance, in the treatment of hemorrhoids, all surgical intervention which is not justified by the urgency of the case.—*Med. Abstract*.

Anodyne Granule for infants :

Nickel bromide, gr. $\frac{1}{14}$.
Codeine sulphate, gr. $\frac{1}{14}$.
Powdered ipecac, gr. $\frac{1}{14}$.
Lithium carbonate, gr. $\frac{1}{14}$.
Oil anise, gr. $\frac{1}{14}$.

Directions.—One or two every fifteen to thirty minutes, till effect.

Nervine Granule :

Gold bromide, gr. $\frac{1}{14}$.
Arsenic bromide, gr. $\frac{1}{14}$.
Ext. aloes, purified, gr. $\frac{1}{14}$.
Nickel bromide, gr. $\frac{1}{14}$.

Directions.—"One or two every twenty minutes until quieted in 'nervousness,' two to six every four hours for grave neurotic cases, to be stopped for the balance of the day when fullness of the head, fever, or tenderness of the gums is felt."—WAUGH.

AMONG cutaneous affections for which electrolysis may be advantageously employed, Bowen (*Boston M. & S. Jour.*) enumerates dilated and hypertrophied blood vessels, so-called "spider-cancers," small angiomas, telangiectasis, rosacea, port-wine marks, moles, freckles, warts, scleroderma, keloid, hypertrophied scars, xanthoma and lupus.

Prince employs the positive pole, with an iride-platinum needle, for port-wine marks. His method is as follows:

The technique of the procedure is as follows: the needle connected with the positive pole is thrust into the true skin parallel with the surface for a distance of one-half to one inch; the skin is "threaded" or skewered, as it were, by the needle. The negative pole is placed in the hand, and the current is then gradually turned on until from two to three milliamperes are recorded. It is now necessary to watch with great care the changes in the skin over the needle. The first change to be noticed is that the track of the needle is marked by a sharply defined white line, the red or purple colored skin directly over the needle becoming blanched by an apparent contraction of the blood-vessels. Presently, in the course of a few seconds it will be observed that little dark dots appear in this white line,—at first one or two, then more which soon coalesce, and the track of the needle becomes marked by a black line due apparently to coagulated blood. If the process be not stopped at this point but be carried still further, the tissue swells, and the epidermis may be raised as a vesicle and much inflammatory action and necrosis may follow.

It is, therefore, important to stop the process at a point when as little inflammatory action as possible has been produced. The best guide for this is the appearance of the dark blackish dots. When a number of these have formed and before the whole path of the needle is marked by the discoloration the needle should be removed. It will then be found that the process will continue for a few minutes after the removal of the needle until the track of the needle is marked by a dark brown line. All depends on the electrolytic process being suspended at the right point, otherwise either the results will be insufficient or damage will be done. It is not possible, of course, to accomplish this destruction of the vessels without producing some inflammation but a slight amount of inflammation does not result in scar-tissue formation. Everything in this respect depends upon the skill and judg-

ment of the operator. The needle should not be inserted again near the same place for two or three weeks until the healing process is completed. At the end of this time it will be noticed that the track of the needle is marked by a yellowish colored skin. This yellow color fades with time until the color approximates that of the normal skin. The color never, perhaps, quite matches that of the neighboring skin for reasons which will be later stated, but the red injected appearance is removed.

Great care must be taken in calculating the distance by which these parallel lines shall be separated. The distance should be such as to be a multiple of the width of the resulting white line, otherwise it will be difficult not to leave streaks of discolored skin between the needle marks. Great care must also be taken at subsequent operations in determining the exact point at which the needle should be inserted next adjoining the preceding needle mark. Upon determining this with accuracy largely hinges success. To do this it is necessary to know the exact width of skin that will be destroyed by any one needle. This can only be learned by practice. Another matter of great importance is this: the parallel lines must be separated by an interval which will render it impossible for the secondary inflammation bounding two lines to coalesce. If the lines are placed too near together ulceration and scar tissue are sure to result.

TREATMENT OF UTERINE HEMORRHAGE BY INTRA-UTERINE ELECTROLYSIS OF THE SALTS OF COPPER—Delineau, reports a dozen patients cured by this treatment. Of these one had been twice curetted without benefit and one had suffered for three years from hemorrhage caused by large fibroids. The treatment not only arrested the hemorrhage, but eliminated the tumors. Delineau believes that intra-uterine electrolysis of the salts of copper will give remarkable results in all cases of uterine hemorrhage; symptomatic of endometritis, or fibroid tumors.

It possesses the following advantages:

1. It is applied easily without anesthesia, and without assistants.
2. The patient is compelled neither to go to bed, to keep her room, nor to give up her usual occupations.
3. The current is weak, therefore without danger.
4. Pain is easily and permanently relieved at the beginning of the treatment. There is no fear of septic complications.

—*Gazette de Gynecologie.*